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MODERN VIEWS IN THE PREVENTION OF TUBERCULOSIS*

BY

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It is a commonplace that in the majority of Western European countries and in North America the mortality from tuberculosis has been declining for many years. Stated concisely, the death rate from tuberculosis in England and Scotland has fallen in the last fifty years by about 75 per cent. Moderately reliable tuberculosis mortality statistics began for the first time to be available coincidently with Koch's discovery of the tubercle bacillus, which discovery set on foot the campaign against the disease. The decline in tuberculosis mortality thus became apparent at much the same time as the antituberculosis measures were initiated, and since then the fall in the one has run parallel with the development of the other. It was natural enough, therefore, for many to believe, and to continue to believe, that this gratifying decline in tuberculosis has been almost entirely due to the noble campaign which has been waged against the disease, largely inspired in this country by Sir Robert Philip fifty years ago. There is much evidence to suggest, however, that the tuberculosis mortality had been declining for many years prior to the special measures taken to combat the disease. Indeed, it is probable that the death rate from tuberculosis had been decreasing in this country since the early part of the nineteenth century. It is, however, apparent that as we go backwards in time an increasing death rate from tuberculosis cannot have continued indefinitely; otherwise everyone would have died of tuberculosis a few hundred years ago, which we know not to have been the case. It has thus been suggested, with considerable evidence for the assumption, that we are at present at the end of a protracted epidemic of tuberculosis, and that the disease is subject to the same epidemic waves as measles, scarlet fever, and diphtheria, with this difference, that whereas the epidemic waves of these latter are relatively short, that of tuberculosis may last a hundred years or more, which is only fitting in a disease which may continue for the lifetime of an individual, in contrast to those which only affect him for a few days or weeks. Further, it is probable that during the course of such an epidemic those nations which have been particularly exposed to the infection have acquired a strong resistance to it, and that those individuals who are peculiarly susceptible to the tubercle bacillus have died at an early age, leaving relatively few descendants who may have inherited their particular susceptibility. Lastly, the number of young people alive to-day in proportion to the number of people over 40 is relatively less than was the case in the Victorian age, and it is well known that tuberculous disease, particularly where females are concerned, reaches its most lethal peak between the ages of 25 and 35. Thus the decline in tuberculosis mortality may to a large extent be due to circumstances over which we have no control—to the fact that, being on the down grade of an epidemic curve, the seed of tuberculosis is less common than formerly, and that this seed has a proportionately smaller number of susceptible persons on which to produce its effects.

Whether or not we believe that these are potent facts in producing the fall in tuberculosis mortality, it should not lead to a fatalistic attitude in regard to the preventive aspects of the disease. There is no reason to believe that an epidemiological curve cannot be modified beneficially by human efforts. No one, for example, would suggest that the worst effects of epidemics of acute infectious diseases cannot be ameliorated by popular education, by social and public health measures, and by the private efforts of medical practitioners. The same can be said of tuberculosis. The recognition of the fact that we may not be able complacently to congratulate ourselves that the whole fall in tuberculosis mortality has been due to antituberculosis measures does not justify the opposite extreme, now adopted by some—to sneer at the great efforts which have been made to combat the disease, or to deny that these have been a potent contributory factor in lowering tuberculosis mortality. We have only to look, for example, to the increase of tuberculosis in Germany during the war, to its great incidence in certain trades, to its wide occurrence in districts smitten by poverty and unemployment, and to the virtual absence of glandular and bone and joint tuberculosis in countries with a clean milk supply, to be certain that epidemiology, immunity, and natural selection are not the only factors in this great problem.

Factors Leading to Tuberculosis

The factors contributing to the spread and morbidity of tuberculosis are many, but the essential cause is, of course, contact with the infecting agent from either the human or the animal source. It therefore becomes of interest to inquire to what extent such infection can or

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should be avoided, and whether attempts to prevent infection should occupy an important place in antituberculosis measures. The answer to this question depends to some extent on whether adult exogenous infection occurs with significant frequency in civilized communities. I would suggest that adult tuberculosis usually occurs as a late visceral manifestation of an earlier disease, just as general paralysis is a late visceral manifestation of syphilis, and that it is exceptional for an adult to develop tuberculous disease as the result of an outside superinfection, protected as he is by tubercle bacilli acquired in childhood. As one German writer had it, adult tuberculosis is the last verse of the song, the first verse of which was sung to the infant in its cradle. Occasionally a rather high rate of tuberculous morbidity has been shown to occur among medical students and nurses as the result of professional contact with cases of open tuberculosis. Heimbeck has pointed out, however, that this excessive morbidity is found only among those probationers and students who give a negative tuberculin test on starting training, and who are thus to some extent comparable as regards susceptibility to tuberculosis to the Red Indian when first brought in contact with white men. No doubt this immunity in tuberculized adults to exogenous tuberculous reinfection may occasionally disappear, just as it occasionally disappears in the case of the common exanthemata. No doubt also it may be temporarily in abeyance as the result of one of the acute infectious fevers like measles, or during the puerperium. At such times a massive exogenous infection may cause tuberculous disease; but such accidents are exceptional, and in the great majority of cases it is as hard to reinfect a previously tuberculized adult as Koch found it to reinfect a tuberculous guinea-pig. How else can one explain the fact that cases of tuberculous adenitis in sanatoria are not superinfected by cases of open tuberculosis in the same ward; that those most cautious corporations—the insurance companies—do not see fit to load the premiums of tuberculosis officers; and, above all, that there is no statistical evidence to suggest that the tuberculous husband infects his healthy consort with any frequency, or vice versa?

Primary Infection in the Child

If it be true—and there will be many to deny it—that a tuberculized adult is not usually susceptible to a secondary exogenous infection, the attempt to prevent infection in adults is not a matter of primary importance. Our efforts should rather be directed to the prevention of massive primary infection in the young child, who, like the savage, forms virgin soil for the tubercle bacillus. It is probable that some 40 per cent. of children who show a positive tuberculin reaction before the age of 2 die from acute tuberculosis before reaching the age of 5. It is highly desirable, therefore, that infection with tuberculosis should be delayed as long as possible, since it would seem that the younger the child when infection occurs the more likely it is to develop lethal disease, the result of the infection. It would seem, from the results of tuberculin tests, that in this country the tuberculization of the community is on the average occurring at a later age than heretofore, and this is all to the good.

In the absence of sufficient proof as to the efficacy or harmlessness of the B.C.G. vaccine—and its possibilities might be explored more fully in this country than they have been—efforts to prevent massive infection in young children must continue to be directed along two main channels: their segregation from close contact with cases of open tuberculosis, and the provision of a clean milk supply. These two measures, if effectively carried out, would go far in themselves to diminish child mortality and morbidity from tuberculosis. They would in my opinion go further: they would tend very considerably to reduce the pulmonary tuberculosis and other late visceral manifestations of the disease in adult life, since experience shows that such manifestations occur very frequently in adults who were subjected to repeated massive infections in childhood.

The segregation of young children from close and continuous contact with open cases of tuberculosis in their family is a matter of great difficulty. The chief ways in which the risk of infection from the human type of the bacillus in a child's home life can be prevented, or reduced to a minimum, are by the removal to a residential tuberculosis institution of an open case of tuberculosis among the parents or those living in the house, or by the removal of the child from the tuberculous home. The second method, or Grancher system, is practised to a considerable extent in France. It aims at bringing up the child in an institution where it will lead a healthy life, no longer exposed to the risk of massive infection. The objection to it is that it interferes with the continuity of the child's home life, and though it is practised to a limited extent in this country, it seems an impossible ideal, and one that it is perhaps undesirable to adopt universally. It is much more satisfactory to remove and treat the adult patient who is the potential source of the infection. With the limited number of beds at our disposal in tuberculosis institutions even this is at present a counsel of perfection. In many districts more beds for tuberculous patients are urgently needed, and in a few cases medical officers of health and tuberculosis officers are too ready to comply with the natural desire of the local authorities to reduce the rates at the expense of adequate accommodation. It is doubtful if any physician in the public health service does his duty adequately unless he is being a continual nuisance to his committee in this respect. No doubt, also, many beds are occupied by patients who might well be nursed at home without detriment to themselves or any risk of infecting young children. Lastly, patients are often inadequately informed of the risk of infecting their children. When this is carefully and considerately explained, it is very rare for them to refuse segregation, however painful such segregation may be.

Infection from Milk

If the segregation of the young child from massive human infection is a matter of extreme difficulty, its segregation from massive infection through milk is eminently practicable. As the result of researches by Griffith, Munro, and others, there is no doubt that bovine type tuberculosis is responsible for a considerable percentage of tuberculous morbidity among children, particularly in Scotland; and though the bovine type of disease is mostly to be found in glandular, lupoid, abdominal, bone and joint, and meningeal lesions, yet it may on occasion cause any type of tuberculosis—not even excluding the pulmonary variety. Having regard to the great prevalence of tuberculosis among the dairy herds of this country, and the absence of a national plan for dealing with it, it is clear that, if conditions are allowed to remain as they are, large numbers of children are doomed to die of bovine tuberculosis or to become crippled by it. In several countries of the world, notably America and New Zealand, bovine tuberculosis has been largely eradicated, owing to the measures adopted to ensure a clean milk supply; but large quantities of tuber-

culous milk are still consumed in this country. As Griffith says, "It is hardly too much to say that if bovine tuberculosis in the human was as distinct clinically from tuberculosis caused by human bacilli as, say, diphtheria is from tonsillitis, public opinion would long ago have insisted on the eradication of tuberculosis in the bovine animal—a perfectly feasible proposition given the necessary dictatorial powers." It is common to hear the remark that a child is all the better for being immunized by a small dose of bovine bacilli. Unfortunately one cannot regulate the dose, and no one would be so bold as to suggest that it is good for a child to drink a teaspoonful of tuberculous pus in its milk.

The provision of a clean milk supply would involve extensive legislative measures and considerable expense. The effort and expense involved, however, would be a fraction of that being at present very necessarily undertaken in rearmament, and would be a productive rather than an unproductive expenditure. It is perhaps not too much to hope that when men have learnt to beat their swords into ploughshares this problem will be seriously tackled.

To those obsessed by the difficulties of the problem of providing a clean milk supply the following postulates, which are accurate enough for all practical purposes, may be put forward for their consideration: any cow giving tuberculous milk to-day will be dead within a year; any cow affected with tuberculosis to-day will be dead in five years; almost every cow which will be giving milk in 1944 is either yet unborn or will be still free from tuberculosis.

Until the ideal of a national clean milk supply is achieved it seems only common sense that all milk given to young children should be pasteurized. It is true that this method is not 100 per cent. efficient in preventing the occasional occurrence of tubercle bacilli in milk, and that in the process certain insignificant losses occur in the milk in respect of its vitamin and mineral content. No one, however, with any knowledge of the subject can believe that these drawbacks do not pale into utter insignificance in comparison with the great risks which are run by children in consuming unpasteurized milk from herds that have not been tuberculin-tested.

Having, by segregation and by the provision of a safe milk supply, taken measures against the massive contamination of virgin soil, the factors that conduce to tuberculous disease must be looked for, not so much among the seed as in the soil in which the seed is sown. That is, infection is almost certain to take place—ideally in small and infrequent doses—and thereafter all our efforts should be directed not so much to the prevention of infection as to raising the resistance of the infected individual, particularly the young adult, against the infection becoming a disease.

Raising the Resistance

Apart from the question of race and breeding, over which we have no control, the resistance of an individual to his tuberculous infection will depend very largely on certain environmental conditions: housing, nutrition, habits, and intercurrent infections.

One has only to glance at the innumerable statistics produced from all over the world to see that tuberculosis and overcrowding go hand in hand—the death rate in many cases running almost exactly parallel to the extent of the overcrowding. The aetiological relation of overcrowding to tuberculosis has, however, been somewhat difficult to resolve into its component parts. On the one hand, tuberculosis may have a profoundly deleterious effect on the earning capacity of an individual household, causing an excess of tuberculous families to live in poverty-stricken circumstances; on the other, overcrowding itself, with its concomitant inferior nutrition, may act by favouring contact infection and by reducing the resistance of the individual to the disease. As the result, however, of the Tyneside inquiry, recently undertaken by Bradbury at the instigation of the National Association for the Prevention of Tuberculosis, it would seem quite definite that overcrowding *per se* is an extremely important causal factor in tuberculosis, though its relative importance will depend to some extent on the nature of the other adverse conditions present. Overcrowding is a factor which is capable of elimination in the course of time, and the problem is being steadily tackled in this country. There is every reason to believe that the better housing of the future will cause a marked diminution in the incidence of the disease.

Undernourishment as a Factor

If, on the other hand, good environmental conditions as regards housing are only obtained at the expense of increased rents, and therefore cause reduction of the family's food-purchasing power, the advantages which accrue from good housing may be considerably outweighed by nutritional depreciation. This was shown quite clearly in some well-controlled observations by McGonigle in Stockton-on-Tees, where the death rate from tuberculosis actually rose in a new housing area. The increased rate could be definitely correlated with a diminished expenditure on food as the result of increased rents. Again, from Bradbury's Tyneside inquiry, and from numerous other well-controlled observations, a definite statistical association can be traced between tuberculosis and undernourishment. It appears that tuberculous families, while eating more bread, consume less meat, less butter, and particularly less milk than non-tuberculous families. Up till now the principles of good nutrition and the subject of dietetics have been largely neglected in the medical curriculum, and while every doctor can prescribe bottles of medicine comparatively few can prescribe detailed diet sheets. It is not surprising, if ignorance, or lack of enthusiasm, on the subject of nutrition is common in the medical profession, that it should be even more common in the general population; and it is almost certain that a great educational campaign on the subject of nutrition, particularly among girls and young women, would be far more conducive to national physical fitness than the less prosaic campaign now being waged on the subject of playing-fields. At the same time there is nothing more annoying than to hear well-fed people arguing that the deficient diets of the poor are entirely due to their ignorance of what are the best foods to buy. As Sir John Orr has shown, it would tax the skill of the most competent dietitian to provide entirely adequate diets in respect of first-class protein, vitamins, and minerals on the income of many of our working-class families. Still, progress is being made in this field also, and the population as a whole has probably never been so well fed as it is to-day. This progress is likely to be expedited when money becomes available for the saving of life rather than for its destruction. One of the most important pieces of public health legislation of recent years took place when milk was made more generally available for school children. The Minister responsible for that measure was then only the Minister for Agriculture; now that he has become Minister of Health even greater things may be expected.

Training in Tuberculosis

It is apparent that preventive measures taken against tuberculosis can never hope to be entirely successful without the active and intelligent co-operation of all those engaged in the practice of medicine. It may be questioned whether in many medical schools the doctors of the future are being adequately trained in the broader aspects of tuberculosis and in its clinical manifestations. Now that tuberculous cases have been almost entirely removed from the general teaching hospitals and relegated to special institutions, the training of the average medical undergraduate in tuberculosis is too often limited to an occasional visit to a chest clinic or a chest hospital. Here he is given the opportunity of examining a few patients suffering from advanced fibroid disease who are usually called "good teaching cases," and of listening to the sighing of amphoric breath sounds to the accompaniment of consonating crepitations and crack-pot notes—archaic physical signs of little vital clinical importance. It would be just as sensible to teach syphilis only by the demonstration of cases whose knee-jerks were absent and whose pupils had long since failed to react to light. Over-emphasis is laid on physical signs in the chest, which are often difficult or impossible to elicit in early pulmonary tuberculosis, whereas too little instruction is given on the general signs of tuberculous intoxication, common to all forms of the disease, which are often apparent to the patient's relatives and friends but overlooked by the doctor obsessed by his hunt for crepitations in the lungs. Again, the significance of history-taking in the diagnosis of tuberculosis is often insufficiently stressed; and yet the vast majority of patients repeat with variations the same history with the regularity of a theme in a symphony. In many medical schools, in short, the student is not educated in the natural history of tuberculosis, and he graduates with the idea that a slight knowledge of percussion and auscultation is sufficient equipment to enable him to grapple with the disease.

It is not surprising under these conditions that most cases are far advanced before they are diagnosed, and that meanwhile the patients may have grossly infected the youthful members of their family; that patients in need of complete rest, and perhaps collapse therapy, are simply advised to take a holiday in the country, or to change their occupation—from a sedentary one like that of a clerk to a strenuous one like that of a chicken farmer; and that the segregation of young children from open cases of tuberculosis is too often neglected even in circumstances where it is perfectly practicable.

I am only too conscious that there is nothing new in the foregoing remarks. Their object has been to focus discussion on some of the more important questions confronting those working for the prevention of tuberculosis. Owing to lack of time, certain subjects have not even been touched upon. It is generally recognized, for instance, that the open-air school is invaluable in raising the resistance of the delicate child to the disease, and it might be questioned why his more healthy brother should not share in its advantages. Again, the prevention of certain diseases which strongly predispose towards tuberculosis, such as silicosis, might be discussed. Lastly, the thorny problem of contact examination will doubtless find strong protagonists on either side. On the one hand its difficulties and impracticability may be stressed; on the other it may be claimed that contact examination, in its widest sense, is among the most important functions of the dispensary in the prevention of tuberculosis. With the latter view I cannot too strongly agree.

FOUR CASES OF WEIL'S DISEASE INFECTED FROM THE SAME STREAM

BY

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Weil's disease is still rare enough in this country to make its diagnosis difficult unless the clinical manifestations are familiar and its possibility is borne in mind. It is a disease that is admittedly serious, and must threaten life whenever it appears. Different writers have recorded a mortality varying from 10 to 50 per cent. of all cases.

Specific treatment in the form of antiserum is available, and may be of great value, especially if administered in large doses and early in the disease. Davidson and Campbell (1934), in reporting a series of cases from Aberdeen, came to this conclusion: "Hence it appears to us that the clinical diagnosis in the early stage, before jaundice occurs, presents almost insuperable difficulties. Accordingly, the full benefit of serum treatment is unlikely to be realized."

During the past two years it has been my good fortune to have seen and treated four cases of leptospirosis. In addition to these I have had under my care, and have investigated, three other possible but unproved cases. The experience gained by the study of each individual case, as it has appeared, has made possible the early diagnosis and treatment of the later cases, with, I maintain, the most satisfactory results.

The diagnosis should escape no one when jaundice, associated with nephritis and nitrogen retention, has followed upon an acute febrile illness in which headache, severe muscular pain, and scattered haemorrhages have been well marked. But all writers are agreed that at least 50 per cent. of these cases never do become jaundiced, while to wait for a laboratory diagnosis before starting serum treatment is to endanger the patient's life.

I feel, however, that in the very earliest stages the clinical picture is suggestive enough to make justifiable the use of serum before the diagnosis can be proved. Sudden onset of a severe illness, with headache, and quite frequently meningeal signs, high fever, severe pain, and great tenderness in the limb muscles; haemorrhages from the nose and the gastro-intestinal and urinary tracts; and a most characteristic watery suffusion of the conjunctivae such as I personally have never seen in any other condition—these well-marked and very characteristic features should make it possible for the condition to be suspected. If in the presence of these symptoms and signs there is the history of a possible source of infection to which the patient has recently been subjected, as indeed there was in each of the proved cases here described, serum treatment should be instituted at once, without waiting for the laboratory to confirm the diagnosis. The very fact that all these cases—so far as I can discover the only cases of this particular infection that have been reported from South Hampshire—should have come under the eye of one practitioner would suggest that cases are occurring and are not being recognized, and that a fuller and wider knowledge of the infection and of its manifestations would bring to light other cases with, one would hope, a shortening of illness and even a saving of life. It is with this end in view that these cases are here reported in full.

Case I

A healthy boy aged 15 complained of headache on the morning of Saturday, July 18, 1936. His temperature was 101°. Throughout the day his condition deteriorated; headache became more severe, and he vomited. By evening his temperature was 103°. During the night he became violently delirious. On Sunday morning Dr. G. B. Wainwright asked me to see him. His temperature was 104° and pulse 94. Restless and complaining of severe headache, he had all the appearances of being seriously ill. It was noticed that his conjunctivae were suffused, and the possibility of a measles infection had been considered. The only other physical signs were those of severe meningeal irritation, a strongly positive Kernig's sign, and neck rigidity. Lumbar puncture was carried out at once, and the fluid, which was under pressure, appeared clear, and was in fact found to be perfectly normal. The boy's headache, which had been relieved by lumbar puncture, returned later in the day, and his meningeal signs tended to increase, so that a further specimen of cerebrospinal fluid was obtained in the evening, but with precisely the same findings.

He was seen on Monday evening by Dr. Gordon Holmes, by which time his meningism had disappeared, and the only findings were a temperature of 103° and absent deep reflexes. In considering the possible diagnosis Dr. Holmes suggested a deep-seated pneumonia, but mentioned that some cases of Weil's disease had been described which had an onset such as had been noted in this case.

For the next three days the patient remained very ill, with raised temperature, headache, and now very severe pain in the muscles of his legs and forearms. There had also been several small epistaxes.

On Thursday evening—the fifth day of his illness—slight conjunctival icterus was noted, while his urine was found to contain bile and albumin. He was seen by Dr. Hamilton Fairley next day, by which time his jaundice had deepened. The diagnosis of Weil's disease was confirmed on clinical grounds, and 40 c.cm. of anti-leptospiral serum was injected intravenously. Dr. Fairley took blood and urine with him to London, and later reported the following findings: "Van den Bergh—positive direct reaction, biphasic, 22 units; blood urea—106 mg. per 100 c.cm.; blood count—white cells, 10,300 (91 per cent. polymorphonuclears). The blood serum gave a positive agglutination reaction, 1 in 3,000 dilution; the urine contained albumin, granular casts, bile salts, and bile pigments."

Twenty c.cm. of serum was injected into muscle on each of the next three days, during which time, though the jaundice deepened, the patient's general condition improved steadily; his temperature was normal by the tenth day. Details of the changes in his blood chemistry are given in Table I.

TABLE I.—*Changes in the Blood Chemistry in Case I*

Date	Van den Bergh		Blood Urea
	Direct	Indirect	
24/7/36	Biphasic	22 units	106 mg.
27/7/36	,,	56 ,,	88 mg.
3/8/36	Delayed	7.5 ,,	29 mg.

During the third week of his illness there was a rise of temperature up to 101°, and this was accompanied by swelling and extreme tenderness of the right parotid gland. So severe did this condition become that the gland was incised under nitrous oxide, and, though no pus was obtained, tension was relieved and the condition rapidly subsided. The boy remained jaundiced for about five weeks, and after a long and rather tedious convalescence made a complete recovery.

This patient, a keen swimmer, had been bathing throughout June and July in a swimming-pool through which runs the River Itchen. It was known that from time to time rats gained access to this pool.

Case II

Some twelve months or so later another healthy boy of 14 became ill. This boy had also often swum in the same bathing-pool as had Case I, but on account of a fractured metacarpal bone he had not done so for ten days preceding the onset of his illness. He was seen on Monday morning, July 26, 1937, by Dr. Wainwright, who found him then in perfect health and pronounced his hand as healed. He was taken suddenly ill the same evening with fever, headache, and epistaxis. His temperature rose to 103°, and on the next day he complained of abdominal pain, which was followed by a melaena stool. I was asked to see him on the evening of July 27, when I found this condition: temperature 102.8°, pulse 96, well-marked conjunctival suffusion, dried blood about the nose and mouth, and signs of meningeal irritation. His headache was relieved by lumbar puncture, when a pathological fluid was obtained. The various laboratory findings are given in Table II.

TABLE II.—*The Laboratory Findings in Case II*

Date	Day	V.d.B.	C.S.F.			Urine	B.U.	White Count	Serum Reaction
			Pn.	Cl	Cells				
			mg.	mg.			mg.		
29/7/37	3	Negative	20	690	6	Alb. + Casts + Red cells +	95	5,100 70%polys	
31/7/37	5	,,	35	670	116	,,	60	8,150 74%polys	+1:10 blood
1/8/37	6	,,	40	690	226	,,	61		
3/8/37	8	,,							+1:1,000blood
6/8/37	11	,,	30	690	9	,,	36		+1:3,000blood +1:30 C.S.F.
10/8/37	15		30	720	4	Trace alb. only	55		
17/8/37	22					Trace alb.	26		

The provisional diagnosis of Weil's disease was made, and serum treatment was begun as soon as the material could be obtained. He had his first dose of serum on Wednesday morning, exactly thirty-six hours after the onset of his illness. He was given 20 c.cm. of serum intramuscularly on Wednesday, Thursday, Friday, and Saturday. During this time, as will be seen from the table, his meningeal condition was deteriorating, while his van den Bergh reaction remained negative. I was not then aware that jaundice was not an essential part of the picture, and I felt obliged to reconsider the diagnosis.

On Monday, August 2, Dr. Hamilton Fairley again came down in consultation, and confirmed the provisional diagnosis upon which treatment had been based. The next day I received a report from Major Brown that this patient's blood serum gave a weakly positive agglutination reaction. This blood had been obtained on the fifth day of his illness.

The boy was given a further 40 c.cm. of serum, and, except for a slight secondary rise in temperature during the third week, made an unusually rapid recovery.

Case III

On Saturday, June 25, 1938, a young man aged 20 was taken ill. He shivered, complained of retrosternal pain, and vomited. The next day he felt better, but was less well again on Monday. I first saw him at 11 a.m. on Monday, about forty hours after his first symptom.

His temperature was 103°, and his only physical signs were an injected throat and suffused eyes. Upon inquiry it was elicited that he had been bathing daily in another swimming-pool through which the River Itchen runs. He was admitted to hospital immediately, and treatment was started as soon as serum could be obtained. His blood chemistry, etc., are shown in Table III. During the next three days he developed extreme tenderness in the muscles of his calves and forearms, while his headache increased. There were several small

haemorrhages from his nose. Serum was given as follows: on June 28, 40 c.cm.; June 29, 40 c.cm.; June 30, 20 c.cm.; July 1, 40 c.cm. The whole of this serum was injected into muscle. His general condition began to improve after the second dose, and on July 2 his temperature was normal.

TABLE III.—*The Laboratory Findings in Case III*

Date	Day	V.d.B.	C.S.F.			Urine	B.U.	White Count	Serum Reaction	Serum Given
			Pn.	Cl	Cells					
			mg.	mg.			mg.			c.cm.
27/6/38	3	–	30	690	4	Alb.++ Casts Red cells	50	11,600 79%polys	Blood, killed g.pig	
28/6/38	4								Negative 1:20	40
29/6/38	5	+				,,	121	7,300 72% polys		40
30/6/38	6		30	690	4				Positive 1:3,000	20
1/7/38	7	+				Trace alb.	100			40
29/7/38	35					,,	30			

Except for conjunctival icterus, which was noted on June 29, there was no clinical jaundice. He was discharged from hospital on July 9—the fourteenth day of illness—being quite free from symptoms. On July 21 he complained of pain in the neck and headache, and his temperature rose to 102°. In forty-eight hours this had subsided, and he was in bed for only three days. Since then he has remained well.

Case IV

This patient, a man aged 29, who was employed as a worker in watercress beds some seven miles up the River Itchen, was admitted to hospital on March 7, 1937, with the following history.

On February 27 he had been taken ill, with high temperature, headache, vomiting, and pain in the back. The diagnosis of influenza had been made, and with treatment his temperature had fallen to normal. On March 3 he was noticed to be jaundiced, and this became rapidly more marked. Epistaxis occurred several times, and his urinary excretion became greatly diminished. He was sent into hospital by Dr. Kent with the tentative diagnosis of leptospirosis.

On admission he was apyrexial, had a pulse rate of 90, was deeply jaundiced, and had a very parched dry tongue and old blood about his nose and mouth. Herpes were well marked. The liver was enlarged and there was a purpuric eruption over the trunk. He was quite rational and was able to give a clear account of his illness. He stated that he had passed very little urine for the last three days. A catheter was inserted, and 6 oz. of deeply coloured urine was withdrawn. This contained albumin, casts, and red cells. The white cell count showed a leucocytosis of 15,300, with 85 per cent. polymorphs. The van den Bergh reaction was strongly positive, while his blood urea was recorded as 572 mg. per 100 c.cm. Blood taken on the day of admission—the ninth day of illness—gave a completely negative result to the agglutination test in all dilutions. Serum treatment had been started at once, and 20 c.cm. was injected intramuscularly on March 8, 9, 10, and 11.

Every effort was made to restart his urinary secretion, and he was given continuous intravenous saline, with hypertonic glucose every four hours. Hot packs, an electric cradle, and hot colonic lavage all proved of no avail, and he died on March 12—the fourteenth day of his illness.

The urine was repeatedly examined for leptospirae, but these were never demonstrated. Blood taken the day before his death gave a positive agglutination reaction at a dilution of 1 in 100. Post-mortem examination revealed an enlarged liver in which leptospirae were demonstrated, and small haemorrhages distributed throughout the viscera. A very striking feature of this case had been that, in spite of the extraordinary figures recorded when the blood urea estimation was carried out, the patient remained able to talk intelligently to within twenty-four hours of his death. His blood chemistry is shown in Table IV.

TABLE IV.—*The Laboratory Findings in Case IV*

Date	Day	Urine	C.S.F.			Blood Count	B.U.	Serum Reaction
			Pn.	Cl	Cells			
			mg.	mg.			mg.	
7/3/37	9	6 oz. Bile, alb., casts, red cells, no leptospirae				15,300 85% polys	572	Negative
10/3/37	12	2 oz.					865	
11/3/37*	13	4 oz.	45	759	4		685	Positive 1 : 100
12/3/37	14 (died)							

* On examination at this date the cerebrospinal fluid was found to contain 660 mg. of urea per 100 c.cm.

The three remaining cases were investigated when the possibility of Weil's disease was considered, but in none of them was the diagnosis confirmed in the laboratory.

Case V

A woman aged 55 was admitted to hospital at the end of August, 1937, very deeply jaundiced and with no other physical signs. The jaundice had been present a week, and had been preceded by abdominal pain, vomiting, and a temperature of 102°.

While in hospital she ran a little irregular fever up to 100°. Her urine contained albumin but no casts. Her van den Bergh reaction was strongly positive, while her blood revealed a massive leucocytosis—45,400 white cells (95 per cent. polymorphs). Her blood urea was 554 mg. per 100 c.cm. on admission and rose to 581 mg. on the day before death, four days later. Her serum was completely negative to the agglutination reaction. Post-mortem examination revealed an enlarged liver and scattered haemorrhages, but unfortunately no attempt to demonstrate leptospirae was made. In this case no suggestion of a possible exposure to infection was obtained.

Case VI

A woman aged 25, a telephonist, in whom no history of likely infection could be obtained, was admitted to hospital on May 26, 1938. She had been taken ill ten days before with fever and pain in the back. The fever persisted for four days, and then gave way to vomiting. Jaundice was noticed on the seventh day of her illness. On admission she was very jaundiced and there was a small purpuric eruption over the trunk. No history of other bleeding could be elicited. The liver edge was palpable, but there were no other physical signs. The urine contained albumin, casts, and red cells, together with tyrosine crystals. A blood count showed 9,600 white cells, 74 per cent. being polymorphs. The blood urea was 49 mg. per 100 c.cm. The van den Bergh reaction was positive. The serum reaction was positive in 1 in 30 dilution. The serum reaction was repeated twice at intervals of one week, in the hope of obtaining a rising titre, but it remained completely negative at all dilutions. This patient was never seriously ill, and improved rapidly. Jaundice disappeared in three weeks from the onset. Urine became normal and the blood urea fell. No serum was administered.

Case VII

A boy aged 7 was admitted to hospital in July, 1938. He was slightly jaundiced, and had been ill with fever up to 102° for eight days. His urine contained albumin, casts, and red cells, while his blood urea was slightly raised. His agglutination reaction was negative and blood count normal. His illness was slight, and he made an uneventful recovery. No serum was given. The boy, we were told, had frequently "paddled" in the River Itchen.

Commentary

It will have been noticed that in each of the proved cases an obvious source of infection was recorded. All three boys who recovered were keen swimmers, and had been bathing frequently in water which certainly might have been infected by rats. An unsuccessful attempt was made by the local health authorities to demonstrate infection in rats caught at these places, but it may be significant that, following an attempt to eliminate rats from the first bathing-pool, no further cases have come to light which could possibly have been infected there, while this summer's case occurred as the result of bathing in another pool in the same river. The fatal case, which is chronologically second on the list, but has been described last for convenience, was that of a man who by reason of his employment must often have been exposed to the risk of infection.

The striking difference in outcome and in length of illness which has been estimated in Cases II and III, where diagnosis was made early and serum given at once, as compared with Cases I and IV, where serum was not given until jaundice had appeared, cannot, I think, be regarded as a coincidence. Both the former cases appeared to have a severe infection, as judged by a well-marked meningitis in Case II and the early jaundice in Case III. Indeed, in the latter case it would seem fair to assume that the jaundice was aborted by serum given at once.

Each of the patients I was able to see at the onset of illness had that typical appearance of the eyes which has to be seen to be understood. Once seen it will always be recognized. In Case III one literally made the diagnosis "from the door," so striking was it. The whole of the bulbar conjunctiva appears inflamed, but there is less "anger" than in an inflammatory conjunctivitis and the injection seen in measles, while the slight conjunctival oedema imparts to the whole a watery look. The coloration is more pink than red. This appearance, when present, is evident within twenty-four hours of the onset, and may persist until the jaundice shows. It has been suggested that it may possibly indicate the site of infection in some cases. Schüffner (1934) describes a case in which a laboratory worker was infected by blood accidentally squirted into the eyes. Davidson and Smith (1936) found this appearance in 57 per cent. of their cases. In every case the blood urea was raised to figures that might well be disturbing, while those recorded in the fatal case, No. IV, are higher than I have seen noted elsewhere. Davidson, Campbell, Rae, and Smith (1934) report a blood urea of 349 mg., with death, and Swan and McKean (1935) record blood ureas of 387/600 mg. and 567 mg., both patients dying, while a case in which the blood urea was 285 mg. recovered. In the jaundiced cases the jaundice itself was suggestive, and was a bright yellow, almost orange-yellow. In fact, it was the colour of the jaundice in Case V which first made me suspect that that patient might be suffering from Weil's disease. Swan and McKean also noted this characteristic of the jaundice, and in describing their cases speak of "intense orange," "bright golden," etc.

The secondary rise of temperature so often described—Schüffner (1934), Davidson and Smith (1936), etc.—appeared in each of the three cases which recovered. Davidson and Smith state that 50 per cent. of their cases showed this feature.

The unusual complication of parotitis which was a feature of Case I must, I think, be associated with the infection, coming as it did at the time of the secondary rise. Willoughby and Shera (1934) describe this as appearing on the tenth day in their case. J. D. Lendrum (1936) noted the abolition of the deep reflexes in his case: it will be remembered that this was found in Case I. During his convalescence Case III complained bitterly that he was losing his hair. This has frequently been recorded in the past (Fairley, 1934; Lendrum, 1936; etc.).

Leucocytosis with a shift to the left is so often found as to be a valuable point in differential diagnosis from catarrhal jaundice, in which this finding is absent. It was absent in Case II and was not at all well marked in Case III. Maxwell's (1935) case had only 6,600 white cells and a normal differential count.

Case III complained of retrosternal pain at the onset of the attack. This is of interest in that Jeghers, Houghton, and Foley (1935), in the report of the post-mortem examination of their case, record acute oesophagitis.

In Weil's disease the physician looks to the pathologist for proof of diagnosis. That being so, real doubt must be cast upon any diagnosis which does not carry with it confirmation from the laboratory. In order to receive the maximum help from the pathologist we must remember that leptospirae can be demonstrated in the blood stream during the first five or six days of the illness. In Case III blood taken on the third day of illness and injected intraperitoneally into a guinea-pig killed the animal after seven days. Leptospirae were demonstrated in the animal's liver.

The agglutination reaction does not become positive until the fifth or sixth day. In Case II it was weakly positive on the fifth day, while in Case III, negative on the fourth day, it was strongly positive by the sixth.

After the tenth day leptospirae may be demonstrated in the urine. From this it can be seen that laboratory diagnosis is unlikely before the seventh or eighth day of disease, while to withhold serum until this time may well mean disaster.

The agglutination reactions, which were all most generously carried out by Major H. C. Brown, show certain points of interest. The negative result as late as the ninth day in Case IV is unusual. This reaction was positive four days later, and the delay may have indicated an overwhelming infection. In this connexion it seems not unreasonable to suppose that in Case V the negative reaction obtained was not sufficient to exclude Weil's infection. The sudden appearance of a strongly positive reaction in Case III on the sixth day, after a completely negative finding forty-eight hours earlier, might be thought to be due to the large doses of serum given in the interim. In a personal communication Major Brown assures me that this is not the case, and he is supported by Professor Schüffner (1934), speaking of cases treated with serum and later proved not to be suffering from leptospirosis. In these cases the reaction remained negative. None of the cases in the present series gave a positive reaction in dilutions greater than 1 in 3,000, whereas reactions at 1 in 30,000 are often recorded in untreated cases which recover. This is probably due to the use of serum, which, though curative, appears to depress the formation of active immunity in the body (Schüffner, 1934).

The diagnostic value of a positive reaction has been established. Davidson and Smith (1936) carried out the test on some 400 different sera and were unable to detect a single positive result, except in their clinical cases. This should be considered in connexion with Case VI, the serum of which gave a positive result at 1 in 30, which was later not confirmed. Major Brown was unable to

TABLE V.—*The Principal Features of the Four Proved Cases*

Case and Age	Mode of Infection	Day of Jaundice	Leucocytosis	Blood Urea	Albumin	C.S.F.	Agglutination	Leptospirae	Day of First Dose of Serum	Total Dose	Length of Illness
				mg.						c.cm.	
Male (15)	Bathing	5th, severe	+	106	+	Normal	+ 1:3,000 7th day	–	6th	100	12 wks.
II Male (14)		None	–	95	+	Pleocytosis 226	+ 1:3,000 11th day 1:10 5th day	–	2nd	120	5 „
III Male (20)	„	4th, slight	±	121	+	Normal	+ 1:3,000 6th day	+ Blood 3rd day	3rd	140	4 „
IV Male (29)	Watercress work	5th, very severe	+	865	+	Normal	+ 1:100 13th day – 9th day	Liver P.M.	9th	80	(Death)

explain this finding, and stated that it was unique in his experience. He was inclined to doubt the diagnosis of Weil's disease in this case, though clinically the patient's condition was most suggestive of it. The dosage of serum to be given and the route of administration have never been laid down. From these cases it would appear that, so long as it is given early and in a dose of at least 40 c.cm. a day, it is as effective when injected into muscle as it is when put into the blood stream. It will be seen that the ultimate result and the length of illness are in direct proportion to the day of disease on which the serum is given—four and five weeks of illness in Cases II and III, compared with twelve weeks and death in Cases I and IV respectively. Serum was never used during the secondary rise of temperature, and this always settled without specific treatment.

In addition to specific treatment, which has already been described, it is important to maintain the urinary secretion. With this end in view all cases were treated with a high-carbohydrate protein-free fluid diet. The urine was maintained alkaline with potassium citrate, and, when necessary, glucose saline was given intravenously. The bowels, which tended to be constipated, were kept open with enemata. In Table V the four proved cases have been compared. The salient and important features of their illness have been recorded and the value of early serum treatment has, I think, been demonstrated.

Summary

Four proved cases of Weil's disease are here recorded. Three of these occurred as the result of bathing in one river, while the fourth patient was infected from the same river, in which he worked. The possibility of early diagnosis is stressed, while the need for early specific treatment is demonstrated. Three other clinically suggestive but unconfirmed cases are reported. Certain points of unusual interest about the different cases are discussed.

It gives me great pleasure to record my indebtedness to Major H. C. Brown, who carried out all the agglutination tests in these cases and gave me much invaluable help. I am indebted also to Dr. Hamilton Fairley, whose opinion in Cases I and II was of the utmost value. The remaining laboratory investigations were carried out for me by Drs. Athole Ross and Charles Wrigley, honorary pathologists to the Royal Hampshire County Hospital: my thanks are due to them. I am very grateful to my partner, Dr. G. B. Wainwright, for his introduction to Cases I and II.

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MASTOID OPERATIONS

A FURTHER SURVEY

BY

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In November, 1937, we published in this *Journal* (p. 954) the results of a series of cases operated on for chronic otorrhoea. This series did not include the cases cured by nasal or pharyngeal treatment, but only those requiring mastoid operations. We classified the operations used as Schwartze's, conservative, modified radical, and radical mastoid operations, and gave our definition of these methods. In reviewing these cases we were able to draw certain conclusions and to suggest indications for and contraindications to the various operations. During the past year we have applied these indications to our cases, and it may be of interest to publish the results.

There is such a slight division between acute mastoiditis and early chronic otorrhoea that can be cured by a Schwartze's operation that we will exclude this class of case from our analysis and confine ourselves to cases of well-established chronic otorrhoea. We have operated on eighty ears in seventy-nine patients, the one bilateral case having had two modified radicals. Of these, twelve had conservative mastoid, forty-five had modified radical, and twenty-three had radical mastoid operations.

The Conservative Mastoid Operation

The conservative mastoid operation when successful gives such satisfactory results that one is apt to attempt it even when contraindications are present, and in three of our cases we adopted this method in spite of finding cholesteatomatous material in the antrum. One of these has since been converted into a radical, and another requires re-operation. The third developed a post-auricular abscess, which was drained, and eight months after operation the ear became dry, and has now been dry for a month, but it is doubtful if it will remain so. Including these three cases, of the twelve conservative operations, eight resulted in dry ears, of which two broke down again and one has been re-operated upon; four have never dried up, and one of these has been operated on again.

The six successful cases had central perforations, except one which had a low posterior marginal perforation with granulations growing from the tympanic ring external to the tympanic membrane. This patient has

had a dry ear with good hearing for ten months, and it is the occurrence of a case like this that makes it difficult to choose cases for this operation. The factor which made us think it was worth trying in this instance was the presence of greenish glairy fluid in the mastoid antrum and air cells, and the absence of any cholesteatoma or granulations in the antrum and attic. All the five cases with central perforations had cellular mastoids with glairy fluid in the cells. This seems to be the best indication for a conservative operation, and, as is seen, six of our cases with this condition were successful and three of the five which did not result in dry ears had a similar mastoid condition. These three patients were aged 9, 24, and 25 years, and the only factor common to them was the long duration of the otorrhoea before operation. We thus see that the cases in this year's series bear out the conclusions we came to last year, and the main reason why our figures are not better is that we did not invariably follow our own indications, as the temptation to try the operation in the first instance is very great. If now we examine this series and exclude from it the cases we should have excluded if we had followed our own indications strictly, we find that eight would have had this operation; five of the eight have dry ears, and the other three are well and have only a mucous discharge from the middle ear. Of the remaining four cases, one has a dry ear, two have again been operated on, and the fourth is suffering from giddiness and has been recommended for further operation.

Our indications for the conservative mastoid operation can now be revised and stated. We consider that it should be confined to those cases in which:

1. The chronic otorrhoea cannot be cured by conservative treatment or surgical treatment to the nasopharynx.

2. The perforation is not in the attic, in Shrapnell's membrane, or in the high posterior region.

3. The mastoid is cellular with glairy fluid in the cells.

4. Granulation or cholesteatoma is absent in the antrum or attic.

The Modified Radical

We have performed forty-five modified radical operations during the year. This operation can be briefly described as a classical radical mastoid operation with this modification: that the tympanic membrane and malleus are not removed and the middle ear is therefore not unduly disturbed.

Of the forty-five patients, twenty-one have dry ears; in eighteen the ears remain moist, but are satisfactory in that there is no indication for any further surgery and it seems probable that the majority will become dry in the course of time. No recent information can be obtained from the remaining six cases as they live too far away. In no case is there any indication for further operation.

Of these cases twelve had cholesteatoma in the attic and antrum and fourteen had polypi or granulations in the external auditory meatus; eight had had previous mastoid operations, either Schwartze or conservative; and twelve had high posterior marginal perforations. The cases which do not come into these categories had central perforations and were not suitable for a conservative operation because of the presence of granulations in the antrum or attic. The type of case with the large reniform perforation forms many of those which are moist but satisfactory: it is often difficult to get the middle ear dry after operation.

On the whole we are satisfied with these operations and see no reason to alter the indications given in our previous paper. There is one modification in operative technique which we have adopted with success in four cases. In the past, cases which were otherwise suitable for a modified radical have had a radical mastoid performed because there was a cholesteatoma in the attic that could not be cleared without removing the malleus. In these four cases the head of the malleus was excised, the neck being cut through just above the short process, and the attic was cleared, leaving the tympanic membrane intact.

The indications for a modified radical operation are thus:

1. Cases which need a mastoid operation and are not suitable for a conservative mastoid.

2. Cases in which there is enough tympanic membrane left to make it worth preserving.

The Radical Mastoid

We have performed a radical mastoid operation in twenty-three cases, of which six are dry and sixteen are moist but satisfactory. We expect many of the latter to be dry in the course of time. Of the six that are dry, the average time taken was three and a half months. In all the cases the middle ear was very seriously disorganized, and seven had had previous mastoid operations—three the Schwartze, two the conservative, and two the radical mastoid. It may seem somewhat unsatisfactory that only six of the ears are absolutely dry, but it is not easy to see what alteration in technique would improve the results. The figures are probably misleading, as all these cases have been operated on in the last twelve months, and those described as "almost dry" and "very satisfactory, moist," when last seen soon after operation and some months ago, are not included with the dry ears.

Among these cases there is only one which seems likely to need further operation, and this is a case in which the meatus has become extremely narrowed so that it is difficult to treat the cavity.

Conclusion

In our previous paper we stated that the objects of any mastoid operation were: (1) to make the patient safe with regard to intracranial complications; (2) to preserve the hearing; (3) to cure the suppuration and so produce a dry ear; and (4) to avoid prolonged after-treatment. The conservative operation is the only one to achieve all these objects when successful, but when the ear remains moist it fails to fulfil, in our opinion, the most important essential—that is, make the patient safe. This, we believe, is literally of vital importance, and that is why only twelve patients of the seventy-nine have had this operation. The modified radical operation fulfils object No. 1, sometimes No. 2, often No. 3, and never No. 4. The classical radical fulfils object No. 1, rarely No. 2, occasionally No. 3, and never No. 4.

Thus the method of choice is the conservative operation, in the rare cases where it is not contraindicated: it is applicable to only 10 per cent. of the cases attending the clinic. If that operation is contraindicated, the modified radical operation is performed in about 60 per cent. of cases. The remainder, some 30 per cent., require a radical operation because the complete disorganization of the middle ear contraindicates any other method.

The degree of destruction of the middle ear does not appear to depend on the duration of the infection, for

the average age of the patients in the various groups is, somewhat to our surprise, almost identical: conservative mastoids, 23 years old; modified radicals, 25½ years; radicals, 24 years.

Summary

A survey is given of cases operated on for chronic otorrhoea during the past year.

The results of the various operations are examined.

Indications for the choice of each method are discussed.

ASSOCIATION OF STAMMERING AND THE ALLERGIC DIATHESIS

BY

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The mechanism of speech is a complicated process in which the diaphragm, the muscles controlling the vocal cords, and those of articulation, as in the palate, tongue, and lips (with the teeth), are mainly concerned. Further, these structures are under the control of the central nervous system, and ideas therein originated are given expression in speech through association fibres, the speech centres, and the centres controlling these peripheral muscles. The uninterrupted flow of speech depends upon the proper functioning and co-ordination of all these structures, central and peripheral. Stammering does not depend upon any gross anatomical defect, but is due, apparently, to some disturbance of this essential co-ordination between the various factors responsible for the production of speech. But what is the underlying cause of this disturbance?

Although usually described as a disorder of speech, stammering is really something more, and certain traits of character may be observed in the stammering child. He is often "nervous" and excitable—sometimes with a tendency to suppressed anxiety—and this mental tension often produces physical tension. A general tendency to excitability and nervousness has been noted in family histories and also a tendency for stammering to run in families, but, notwithstanding a rather unstable and nervous temperament, the stammerer is usually intelligent and has a good brain.

One morning, some months ago, three asthmatics happened to present themselves at this medical unit for interview, one shortly after the other. There would have been nothing remarkable in this but for the extraordinary coincidence that each proved to be a stammerer. The thought immediately occurred to one of us (A. M. K.) of the possible association of stammering with asthma and, having regard to the allergic aetiology of the latter, other allergic manifestations. Recalling some resemblance in certain features of allergic individuals and stammerers, it appeared that an inquiry into the presence or absence of allergic manifestations in the personal history of the stammerer and his family might yield results of some note. Accordingly arrangements were made to examine a consecutive series of 100 children who suffered from stammer.

Through the kind offices of Dr. Greenwood Wilson and Dr. Colston Williams (medical officers of health and school medical officers) of the city of Cardiff and county of Glamorgan respectively, we were enabled to examine 100 school children selected by head teachers because they were stammerers. These were children, 5 to 14 years of age, who were attending elementary schools in Cardiff and the neighbouring towns of Penarth, Caerphilly, and Bargoed, and were representative of town, suburban, and industrial areas. The parents or guardians were invited to bring them for special examination. Some children, however, came unaccompanied and, as it was thus impossible to obtain any family or other history, they were discarded. Likewise two adopted children, whose foster parents knew nothing of their family history, were also discarded. Again, in certain cases the speech defect proved to be dependent upon some anatomical fault, such as cleft-palate or hare-lip, and in others the children were mentally retarded and the power of speech was immature. Some exhibited nasal speech or were mere "lispers." None of these was a stammerer, and so all were excluded from the investigation. No other selection was made, and the remainder were examined in rotation until 100 true stammerers had been seen.

Each child was examined personally and the parent or guardian cross-questioned. Careful inquiry was made for any personal or family history of allergy or allergic inheritance, and questions were asked in regard to such allergic manifestations as asthma, eczema, hay-fever, migraine, and urticaria. Caution was often necessary in framing the questions relative to family history, for some parents were inclined to boast that theirs "was always a healthy family" or that "there never was any trouble or disease in our family." Some seemed to think that questions, particularly in regard to skin eruptions—eczema and urticaria—cast rather a reflection on them, whereas most quite freely admitted if there was any incidence of asthma in the family. With tact and patience, however, the family history usually came out clearly and the parent became quite interested. With regard to migraine we accepted as evidence headaches, periodically recurring and severe, principally unilateral or over the temple and throbbing in character, often accompanied by visual disturbances and vomiting, and all against a background of good health.

It was not unusual in such cases to get a history of stomach trouble, sickness, vomiting, or "bilious attacks," without any mention of associated headaches until direct questions were asked. Apart from the question of migraine note was taken of any aversion to or gastro-intestinal upsets following particular foods, or "fastidiousness" regarding food generally, exhibited by the child and suggestive of food allergy. The family history on both paternal and maternal sides was carefully sifted, and at the same time the opportunity was taken of noting whether there was any family history of stammering and whether the child was right- or left-handed.

Of the 100 children examined eighty-one were boys and nineteen girls; eighty-nine proved to be right-handed and eleven left-handed; and a family history of stammer was present in sixty-five cases and absent in thirty-five.

Incidence and Nature of Allergy Present

I.—CHILDREN WITH A PERSONAL HISTORY OF ALLERGY (52 CASES)

(*a*) Fifty-two children gave a *personal* history of allergic manifestations, as shown in the following table:

	Children Affected
Migraine	19
„ + urticaria	8
„ + „ + asthma	1
„ + asthma	3
„ + „ + eczema	1
	32
Urticaria	11
Asthma	4
„ + eczema	2
„ + hay-fever	1
„ + „ + eczema	1
	8
Eczema	1
	52

(*b*) Thirty of these fifty-two children also gave a history of "fastidiousness" in regard to food generally, dislikes or refusals of, or gastro-intestinal upsets after, particular foods.

(*c*) Of these fifty-two children with a *personal* history of allergy forty-eight *also* had a *family* history of allergy.

The *family* history of allergy was

	Cases
On the maternal side in	25
„ „ paternal „ „	10
„ both maternal and paternal sides in	12
In another member of the family only (sister) in	1

The allergic manifestations in the *families* of these forty-eight children are tabulated below:

	Families Affected
Migraine	8
„ + asthma	9
„ + urticaria	2
„ + „ + asthma	3
„ + „ + hay-fever	2
„ + „ + „ + asthma	1
„ + „ + „ + eczema	1
„ + asthma + eczema	1
„ + „ + hay-fever	3
„ + eczema	1
	31
Urticaria	1
Asthma	10
„ + urticaria	2
„ + „ + hay-fever + eczema	1
	13
Hay-fever	2
Eczema	1
	48

(*d*) The closeness of the allergic inheritance of these forty-eight children may be observed by noting in each case the *nearest* relation who suffered from allergic manifestations.

In 20 cases the mother suffered	In 6 cases a grandparent suffered
„ 9 „ „ father „	„ 4 „ an aunt suffered
„ 8 „ both parents suffered	„ 1 case a sister „

Thus it will be seen that in thirty-seven cases one or both parents exhibited allergic manifestations and in six a grandparent was the nearest sufferer. An aunt was the nearest relative in four cases, and in one case the allergic symptoms were observed in a sister of the child.

(*e*) Thirty-three of the fifty-two children (including the four with no allergic *family* history) had a *family* history of stammer. The closeness of the stammering inheritance was as follows:

	Cases		Cases
Father stammered	13	Cousin stammered	3
Mother „	4	Brother and sister stammered	1
Grandparent stammered	2	Great-uncle stammered	1
Uncle or aunt „	9		

(Where brothers or sisters stammered they have been omitted, except in one instance where no other near relation with stammer was discovered.)

(*f*) Seven of the fifty-two children were left-handed; six of these seven had a family history of allergy and two also a family history of stammer.

II.—CHILDREN WITH NO PERSONAL HISTORY OF ALLERGY

(*a*) Forty-eight children gave *no personal* history of allergic manifestations, but a *family* history was obtained in *all* except one. Fifteen of these children, however, gave a history of "fastidiousness" in regard to food generally, dislikes or refusals of, or gastro-intestinal upsets after, particular foods.

The *family* history of allergy was

	Cases
On the maternal side in	27
„ „ paternal „ „	14
„ both maternal and paternal sides in	3
In another member of the family only (sister) in	3

The allergic manifestations in the *families* of these forty-seven children are shown in the following table:

	Families Affected
Migraine	24
„ + asthma	7
„ + „ + hay-fever	2
	33
Urticaria	1
Asthma	9
„ + urticaria	1
„ + hay-fever	2
„ + eczema	1
	13
	47

(*b*) The closeness of the allergic inheritance, or nearest relative who suffered from allergic manifestations, in the families of these forty-seven children was as follows:

In 26 cases the mother suffered	In 5 cases a grandparent suffered
„ 10 „ „ father „	„ 2 „ an aunt „
„ 1 case mother and father „	„ 3 „ a sister „

Thus one or both parents suffered in thirty-seven cases, in five cases a grandparent, in two an aunt, and in three a sister.

(*c*) Thirty-two of the forty-eight children (including the one with no allergic *family* history) had a *family* history of stammer. The closeness of the stammering inheritance was as follows:

	Cases		Cases
Father stammered	14	Cousin stammered	2
Mother „	4	Brother or sister stammered	2
Mother and father stammered	2	Great-uncle „	1
Grandparent stammered	1	First cousin once removed stammered	1
Uncle or aunt „	5		

(Where brothers or sisters stammered they have been omitted, except in the two instances where no other near relation with stammer was discovered.)

(*d*) Four of the forty-eight children were left-handed and all had an allergic family history. Three also had a family history of stammer.

III.—A SERIES OF CHILDREN EXAMINED WITHOUT REFERENCE TO STAMMERING

By way of comparison reference may be made to an investigation, recently completed by one of us (D. A. W.), in which 1,000 elementary school children in Cardiff were examined in a similar manner. This had nothing to do with stammering, but was undertaken in connexion with the "milk-in-schools" scheme, to discover whether there were any allergic manifestations of any kind (not necessarily to milk) in the personal or family histories. The results are tabulated below:

	%
(*a*) 500 children taking milk at school:	
Personal history only of allergic manifestations	1.2
„ + family history of „ „	9.6
Family history only of „ „	23.0
(*b*) 500 children *not* taking milk at school:	
Personal history only of allergic manifestations	2.0
„ + family history of „ „	9.0
Family history only of „ „	33.2

Discussion

While hypersensitiveness in the human subject may occasionally be acquired, the importance of the hereditary factor in allergic conditions is now generally accepted. In a few cases the particular type of allergy appears to be inherited; more often, however, specific sensitivity is not inherited, but the tendency to become sensitive is transmitted from one generation to another. It is not necessarily the disease, such as asthma or urticaria, which is inherited, but the constitutional make-up or allergic diathesis which predisposes descendants to the development of sensitiveness. They do not of necessity suffer from the same type of allergic manifestation as their forebears, but they may become sensitive to any allergic agent with which they come into adequate contact at any time from birth onwards. The allergic individual is one who is constitutionally susceptible.

The predisposition is localized, as a rule, in some particular group of cells in special tissues or organs of the body, but an allergic reaction does not occur until the specific allergen to which the patient is sensitive comes into adequate contact with them. The variability of the allergic symptoms is due to the fact that the location of the groups of potentially sensitive cells is not constant.

Vasomotor reactions in the tissues, transitory and reversible, are the principal local features of the allergic response in the human being—first vascular spasm, then capillary dilatation and increased permeability resulting in an exudation of oedematous fluid and cellular infiltration, chiefly eosinophils—and so it has been suggested that allergic individuals inherit an unstable vasomotor system. But vasomotor irritability—seen particularly in urticaria and angioneurotic oedema—is probably part of the constitutional "make-up" of allergic subjects, and is an accompaniment, but not the primary cause, of the allergic state. Vasomotor instability occurs in other conditions, but when it is present in individuals with the allergic diathesis or inherited predisposition to become sensitive to allergens it probably plays some part in the production of symptoms.

As previously noted, a general tendency to excitability and nervousness often runs in the families of stammerers. The stammerer himself is apt to be "nervous" and excitable, and his mental tension—suppressed anxiety—often causes physical tension. Fear, anxiety, and other emotions generally cause an aggravation of his stammer. Nervous, emotional, or psychical stimuli have also considerable influence in allergic conditions; and in asthma, for example, it has been suggested that psychological factors, such as fear, anxiety, anger, and similar emotions, may precipitate an attack. It would appear, however, that such agents are of little importance in the absence of the allergic predisposition, but in individuals already so predisposed emotional disturbances may act as aggravating factors and possibly precipitate a reaction.

Nervous and emotional disturbances are not the cause of the allergic state, but may accompany or result from it, and consequently allergic individuals may be specially alert and active mentally. Stammerers also, it may be recalled, are usually intelligent and have good brains, notwithstanding their rather unstable and nervous temperaments. The close connexion of the nervous and vascular systems (Forbes and Cobb, 1938) provides the path through which the latter may be influenced by fear, anxiety, anger, and other emotional and nervous disturbances.

In allergic migraine the hereditary factor is particularly strong, and the exciting factor is usually a food allergen. Here it may be recalled that sixty-five of the 100 stammering children investigated gave a *family* history of migraine and thirty-two a *personal* history of it. Incidentally, forty-five had a *personal* history of "fastidiousness" in regard to food generally, refusals or dislikes of, or upsets after, certain foods. The particular type of cerebral disturbance responsible for the headaches and other manifestations is thought to be a local allergic reaction producing temporary oedema of the meninges, cortex, or other parts of the brain, with, possibly, vascular spasm. Goltman's (1936) study of a typical case of allergic migraine in which he had the opportunity of making direct observations through an opening in the skull strongly supports this view. Such a mechanism could explain the various transient phenomena of typical migraine, such as visual disturbances, giddiness, paraesthesias, disturbances of speech, twitchings, and local paresis. The sickness and vomiting might also have a similar central origin. The transient disturbance of speech, at times amounting almost to aphasia, which is occasionally an accompaniment of the migrainous seizure, is of special significance in view of the findings in the present investigation into stammering. The observations of Foster Kennedy (1926) on focal cerebral oedema as a cause of cerebral symptoms in angioneurotic oedema also lend support to this view. Reference to the figures given above show that a *personal* history of urticarial attacks was obtained in twenty of the 100 stammering children investigated. In fact, either migraine or urticaria, alone or in combination, and with or without some other allergic manifestation, was present in the *family* histories of seventy children and in the *personal* histories of forty-three.

In view of the close and practically constant association of stammering and allergic manifestations in the personal and family histories of the stammerer, as revealed by the present investigation, it is difficult not to conclude that there is something more in it than a mere casual relationship between stammering and the allergic diathesis. It is not suggested that stammering is the direct result of an allergic reaction; but, considering the high incidence of allergic manifestations in our series of stammerers and accepting the view that the local tissue response in allergy is a vascular one—spasm followed by capillary dilatation and oedematous exudation, transitory and reversible—we may assume the existence of a cerebral cortex which is hypersensitive to any transient vasomotor disturbance brought about not by a specific allergen but by the effort of speech. In any case the findings are suggestive that an attempt to influence the sensitive constitution of the stammerer might at least be worth a trial. The frequency of migraine and "fastidiousness" in regard to food generally which we encountered, and the fact that a food allergen is usually the exciting factor in migraine, suggest that a beginning might be made with special allergic or elimination diets. Even ephedrine might have a place in treatment. But all this is a matter for further study.

Summary and Conclusions

A consecutive series of 100 children who suffered from stammer was examined with a view to discovering the association, if any, between stammering and the allergic diathesis. The personal and family histories of each child were carefully sifted for any evidence of allergic manifestations.

In all cases, except one, positive evidence of allergy was found in the personal *or* family history. Fifty-two

gave a positive *personal* history, and forty-eight of these also had a positive *family* history. Forty-eight gave *no personal* history, but a positive *family* history was obtained in all of them except one.

The various allergic manifestations in the personal and family histories have been tabulated and the closeness of the allergic inheritance noted.

A family history of stammer was obtained in sixty-five of the 100 cases, and the closeness of the stammering inheritance has been noted.

Stammering tends to run in families. The hereditary factor plays an important part also in the allergic diathesis—the constitutional "make-up" which is apt to become sensitive being transmitted from one generation to another. A general tendency to excitability and nervousness frequently runs in the families of stammerers, who themselves are often "nervous" and excitable and whose mental tension—suppressed anxiety—often causes physical tension; such emotions generally aggravate the stammer. Nervous, emotional, and psychical stimuli have also an influence in allergic conditions, and it has been suggested that, in asthma, certain emotions—fear, anxiety, etc.—may precipitate an attack. These, however, appear to be mere aggravating factors, and are of importance only in the presence of the allergic predisposition of which they are a frequent accompaniment or a result. The vascular system through its close connexion with the nervous system may be influenced by fear, anxiety, anger, and other emotions, in stammer and also in allergy.

Notwithstanding their nervous and rather unstable temperament, stammerers are usually intelligent and have good brains. Allergic individuals also—for example, sufferers from migraine—are often very alert and active mentally.

In allergic migraine the hereditary factor is particularly strong and the exciting factor usually a food allergen. Sixty-five of the 100 stammering children gave a family history of migraine and thirty-two a personal history of it. Forty-five had a personal history of "fastidiousness" towards food generally or upsets after particular foods.

The close and practically constant association of stammering and allergic manifestations in the personal and family histories of the stammerer, as revealed by the present investigation, rather favours the view that there is something more than a mere casual relationship between stammering and the allergic diathesis.

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R. Cento (*Minerva med.*, 1938, **29**, 235) records his observations on ten patients with ulcerative tuberculous lesions and purulent sputum containing a large number of bacilli who were treated for thirty consecutive days by intravenous injections of 2 c.cm. of beeswax dissolved in 5 per cent. of olive oil and 10 per cent. of cod-liver oil, combined with calcium by mouth or intravenously. In all the patients after the first ten injections there was a diminution in the quantity of sputum, which subsequently became less purulent; finally there was only a little morning expectoration. In all the ten cases after the first ten to fifteen injections there was a diminution in the number of tubercle bacilli, which assumed a granular appearance and became no longer acid-fast. At the end of treatment four patients became sputum-negative, and in two others it was possible to find only a few acid-fast bacillary forms on examination of the gastric juice. Inoculation of numerous specimens of this sputum on Petragnani tubes produced a macroscopic growth in only two cases.

THREE CASES OF INTUSSUSCEPTION IN THE ADULT

WITH REFERENCE TO AETIOLOGY

BY

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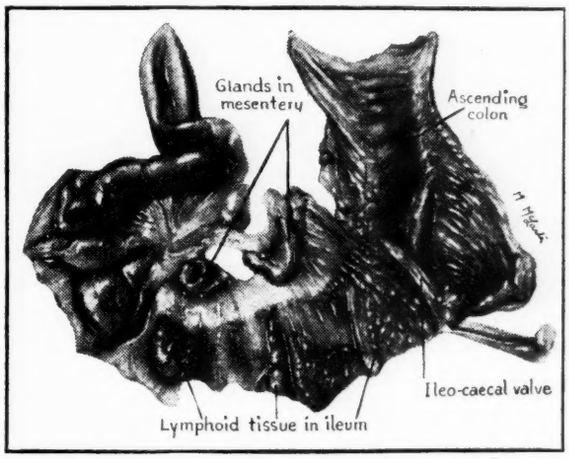
Acute intussusception in the adult is rare, and then usually occurs in connexion with "tumours" of the intestinal wall (Fiske, 1937; Goodall, 1910); but this is not an essential factor (Bryan, 1937), for in Case III, so far as could be found, no initial cause was present. Several cases have been reported in which the causal tumour was discovered only at subsequent operations (Oughterson and Cheever, 1929). In infants so-called primary intussusception is said to arise in connexion with inflammatory changes in the lymphoid tissue in the mucosa of the lower end of the small intestine (Perrin and Lindsay, 1921). This lymphoid tissue swells, and forms as it were a "tumour." The accompanying illustration shows this



Specimen taken from a fatal case of intussusception in an infant. The caecum and lower few inches of ileum have been opened from behind, and a sessile tumour-like mass of lymphoid tissue is seen about three inches from the ileo-caecal valve. This formed the apex of the intussusception.

"tumour" formation very well. At operation in infants almost invariably the lymph glands in the mesentery are also enlarged, a change not found in these three cases. That so-called primary intussusception does not occur so commonly in the adult is said to be due to the fact that lymphoid tissue becomes reduced with age, as is well seen in the pharyngeal and palatine tonsil areas, and also because the lumen of the intestine is relatively larger in the adult.

Intussusception differs from other forms of intestinal obstruction in the fact that the patient usually passes stool, as is well shown here. In infants the stool often contains blood and mucus, but in these cases no blood was noticed.

Case I

In December, 1937, a woman aged 47 was admitted to hospital complaining of ten days' intermittent abdominal pain. Her history contained nothing of note save an attack of abdominal colic one year previously that lasted a few hours only.

Ten days before admission there was an onset of mild generalized abdominal pain not associated with vomiting. Seven days before admission the pains became more severe, and were

associated with vomiting. She volunteered the statement that they were like labour pains, lasting two minutes every ten minutes. The pain was localized to an area to the right of the umbilicus, and persisted most of the day. Five days before admission she was almost free from pain, but as her bowels had not been opened since the onset of the pains she took senna. Four days before admission her bowels were open, but the pains became more severe and she vomited many times. Two days before admission she again took senna, with the same result: the pains became very severe and there was much vomiting. On the day of admission her bowels were open. (On no occasion did she pass blood.) The pains and the vomiting continued.

Examination.—Her temperature was 98° and pulse 80. She was seen to have a typical attack of abdominal colic. On inspection a mass was observed in the abdomen, to the right of and below the umbilicus; it was dull to percussion, and was tender but not fixed. Her private doctor had pointed out that the mass became harder during an attack of colic. On rectal examination no abnormality was found, and no blood. In spite of the low pulse and temperature, a diagnosis was made of appendix abscess, with involvement of gut causing intestinal obstruction.

Operation (by C. L. H., under general anaesthesia).—An intussusception was present, the apex of which was in the transverse colon. On reduction it was found that a sessile tumour, 2 cm. in diameter, situated in the small intestine three inches above the ileo-caecal valve, had formed the apex of the intussusception. Reduction of the intussusception was easy up to the ileo-caecal valve; the last part—that is, reduction of the tumour and the ileum out of the colon—gave some difficulty. To remove the tumour it was necessary to open the gut, which was closed in two layers. No other tumours were found in the limited part of ileum examined.

When seen in May, 1938, the woman was very well.

I am indebted to Dr. Gilmour of the Bernhard Baron Institute of Pathology of the London Hospital for the following report and observations on the tumour.

PATHOLOGICAL REPORT

The specimen was a nodule 2 cm. in diameter received in 4 per cent. formaldehyde. The greater part was round, smooth, and brown, but one surface, 1.5 cm. in diameter—the cut surface of removal—was flat and showed rough white muscularis. On section the round part showed an outer zone, up to 1.5 mm. deep, of firm brownish or yellowish-white thickened mucosa which was ill defined inferiorly. Beneath this was a firm yellowish-white mass in the submucosa which infiltrated the muscularis. The muscularis was hypertrophied up to 4 mm. thick.

Microscopically the growth shows polygonal and columnar cells arranged in branching and anastomosing trabeculae, many of which contain alveolar spaces. The trabeculae are often two cells wide, but many are much wider. The cells at the borders of the trabeculae and surrounding alveolar spaces are palisaded and usually columnar. The remaining cells are polygonal. The cytoplasm in the basal parts of the columnar cells and in the smaller polygonal cells is dense, but in the larger polygonal cells is slightly rarefied. The denser cells are stained deep red or purple, and appear indistinctly granular in haematoxylin and eosin. The granularity is most marked in the bases of the columnar cells. The less dense cells are deeply stained and show distinct pink or purple granules, A few cells contain small vacuoles. In some places where the cells are separated slightly they are seen to be connected by intercellular protoplasmic bridges not unlike the prickles of squamous epithelium. By Fontan's silver impregnation the basal cytoplasm of the columnar cells, and to a much less extent the cytoplasm of other cells, shows numerous finely particulate argentaffin granules. The borders of the trabeculae are consequently outlined sharply by this method. Sections of tissue fixed for six weeks in formaldehyde, transferred to Müller's fluid for one week and embedded in paraffin, showed the chromaffin reaction. The chromaffin reaction was also obtained by placing for four days in Müller's fluid paraffin sections of formalin-fixed tissue. The reaction is seen as a bright lemon-yellow diffuse coloration of the parts of the cells that show abundant argentaffin granules. The chromaffin reaction differs from that given by the adrenal medulla in its colour and by the fact that it is given by tissue fixed in formaldehyde for a considerable time. Other argentaffinomas examined by me have shown these peculiarities in the chromaffin reaction. Only a very few cells contain a scanty amount of cholesterol esters yielding liquid crystals on heating. The nuclei are uniform, small, and round, with prominent nuclear membranes, pale nucleoplasm, a scanty net of delicate chromatin threads, several small nodes, and one to three small nucleoli. The alveolar spaces are small, and contain a lightly stained vacuolated coagulum. The stroma of the growth is scanty, and consists of collagenous and smooth muscle fibres and a few vessels. Some of its spindle cells contain a little granular fat.

The mucosa has lost its superficial epithelium, is inflamed, and is extensively infiltrated by growth; intestinal tubules are very scanty. The muscularis mucosae is slightly thickened and gives extensions into the stroma of the growth beneath. The small amount of muscularis present in the section is infiltrated by trabeculae of the growth.

The tumour is an argentaffinoma, locally malignant in that it is growing by infiltration.

Case II

In March, 1936, a woman aged 66 came to hospital complaining of severe abdominal pain. She had been admitted on two previous occasions on account of attacks of abdominal colic, but on investigation no cause was found.

On the day before admission she had severe colicky abdominal pain, most marked to the right of the umbilicus, but radiating to the left side and to the back, though not to the shoulders. The pain was associated with much vomiting and diarrhoea: no blood was seen in the stools.

Examination.—Her temperature was 99° and pulse 120. The notes state that examination of the abdomen revealed rigidity of an area to the right of the umbilicus, deep to which there was a rounded tumour "which suddenly disappears." No abnormality was found on rectal examination. A diagnosis of intestinal obstruction due to a gall-stone was made in view of the previous history of colic.

Operation (by Mr. Alan Perry, under spinal anaesthesia).—An intussusception, ileo-ileal, was present, which was about two feet in length from point of entry to apex. Reduction was not difficult, and at the apex was found a sessile tumour (a lipoma) 3 by 1.5 cm. in diameter. To remove the tumour it was necessary to open the gut, which was closed in two layers. The gall-bladder contained one large stone about an inch in diameter. Convalescence was satisfactory.

The pathological report stated that there was venous engorgement and acute inflammation of a subserous intramuscular lipoma of the ileum, with ulceration of overlying mucosa.

The patient was well when seen in January, 1938. She complained of flatulence, but had had no other attacks of colic since the operation.

Case III

In May, 1935, a man aged 27 was admitted to hospital complaining of eight hours' abdominal pain. He had had an attack four and a half years previously. Pain started in the region of the umbilicus, and later shifted to the right iliac fossa. Since then, every one or two months, he has had at night attacks of abdominal pain which lasted a few hours. The pain usually remained in the region of the umbilicus.

Eight hours before admission he had severe colicky abdominal pain which made him "double up." The pain was associated with vomiting. The bowels had been open once since the onset of the pain.

Examination.—The temperature was 98.8° and pulse 78. The abdomen was tender and rigid on the right side, but no abnormal lumps were felt. Rectal examination revealed

nothing abnormal. A diagnosis of acute appendicitis was made.

Operation (by Mr. Hirschfeld, under general anaesthesia).—An intussusception was present. The apex of the intussusception was in the transverse colon, and on reduction it was found to be the ileo-caecal valve. No tumour or other cause was discovered. The appendix was removed. Convalescence was satisfactory.

The pathological report stated that there was venous engorgement of the appendix.

One month after operation the patient was well, having had no more attacks of pain since. He has answered subsequent inquiries, and wrote in March, 1938, that he had been very well.

Summary

The rarity of cases of acute intussusception in the adult, and the aetiology of the condition, are discussed.

The history of three recent cases is given. In two of these the causative factor was a neoplasm.

I am indebted to Mr. H. S. Souttar and Mr. Alan Perry for permission to publish the notes of the three cases, which were under their care in the London Hospital.

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CONGENITAL DEFORMITIES OF LEGS

BY

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On December 1, 1936, a girl aged 16 was brought to me as she was said to have been "born without any legs." She came into my consulting-room walking on her hands, using the base of her trunk as a middle support. She was a most curious sight when I first saw her: one had the impression of a rather large dog coming into the room, an impression made stronger when she leaped from the floor to an ordinary chair and squatted on her haunches with a rather pleased smile at her trick. Her speed when "walking" was amazing; she could cross the room as fast as an ordinary adult, and when she wished to sit on a chair she leaped into it and sat like an ordinary human being. The change from the ambulatory position on the floor, where she looked like a domestic animal, to that on a chair, where she took on the appearance of an ordinary individual, was dramatic. She stood with most of her weight on her left lower limb, and the two curious teat-like projections from the right lower limb enabled her to balance herself on her two "legs" with the aid of one hand. She wore a large sock to cover the right stump, and a boot—much deformed—on the left foot.

On examining her more closely one found that through constantly walking on the palms of her hands with the wrists dorsiflexed she had developed a greatly thickened palmar skin, comparable in character to that of the sole of the foot and studded with "hoofs." Apart from the acquired thickening of the palmar skin and the congenital deformities of the legs the girl was normal. The "legs" themselves were very interesting, and are well shown in Fig. 1. The right one was about 6 inches long, as measured from the great trochanter; it was a large fat stump ending in two teat-like projections, presumably abortive toes, and looked for all the world like a cow's udder. One could feel bones inside the left "leg," which was about a foot long, and had a femur, a tibia, and three inner toes; the fibula and two outer toes were missing, and the dimple over the tibia so characteristic of the con-

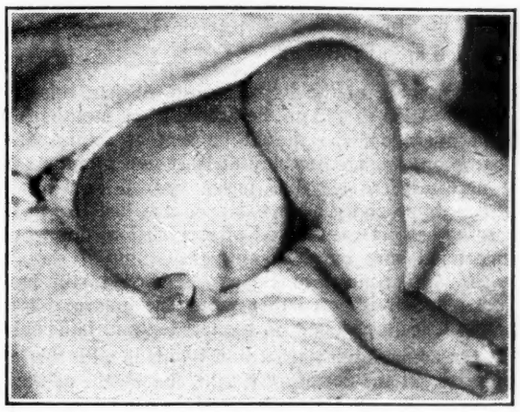

FIG. 1.

genitally absent fibula was present. *X*-ray photographs revealed that both hips were dislocated, and that there was an abortive femur with condyles in the right stump and an immature femur and tibia in the left stump.

The girl herself, content for many years, was now reaching womanhood, and wanted to be the same height as others and to walk like others. Was it possible? My first thought was to straighten the left knee and to put the left foot into full equinus in order to make the left lower limb as long as possible. Afterwards the limb would have been fitted into the socket of an artificial limb which had a knee-joint at the usual level. I have done this before in a similar unilateral case with success. I thought we might fit a tilting-table leg to the right stump. Her bodily development was good, and there was no doubt she would be able to use a tilting-table leg satisfactorily.

Those responsible for the girl were not in favour of an amputation of the right stump, as they were afraid that, if the attempt to make the girl walk failed, the operation might have ruined any return to her original method of progression. I wished for a further opinion, and sent her to my friend the late Dr. H. R. Moxon, at Queen Mary's Hospital, Roehampton, making use of the Ministry of Pensions scheme whereby civilians have the advantage of advice from expert military limb-fitting surgeons.

Dr. Moxon's Report on the Case

"The fitting of artificial limbs in this case, though presenting difficulties common to all such cases of deformity, nevertheless does not present insuperable difficulties—in fact, I think there is a reasonable chance of obtaining quite a successful result. This is enhanced by one very important asset—namely, the girl's obvious *wish* to be fitted and *look* like a normal girl in height and appearance, by which her willing co-operation is assured. Also youth and strength are on her side, and thus the physical and mental aspects are favourable.

"*Right Side.*—This should be fitted with a metal tilting-table leg made as light as possible, with the body weight taken accurately on the tuber ischii. The stump, however, is at present much too long, measuring about 6 inches. Shortening by at least 3 inches is necessary, the aim being to give a snugly fitting socket without too much prominence in front, which would be unsightly under the skirt and would at the same time make balancing more difficult and get in the way of the instrument on the left side.

"*Left Side.*—Operation is not recommended. It is suggested that an apparatus should be fitted by which her body weight is taken on the tuber and the foot is supported on a platform partly enclosed in an artificial knee with an artificial shin and foot below. Then it seems fairly certain that by means of a double knee-cap and various straps the knee and foot can be gradually pulled into position. This result would improve as time went on, and need not be a painful process in any way in a properly adjusted instrument.

"This being the general outline of the case, the stages recommended are as follows:

"1. Shortening of the Right Stump.—When this is ready for fitting, which should not be before three months from the date of operation, she should be sent as an in-patient to Roehampton, prepared to stay at least two months. This is very necessary, as she has never walked and has to be taught to do so and get her balance, etc., just like an infant. Regarding her present method of locomotion, this would not be interfered with by shortening the stump if she fails to manage with artificial limbs, as she would still have the buttock; and it is noted that when she gets about on the floor she takes the weight on the left leg and hands chiefly.

"2. On admission a start would be made with the left side in order to get the necessary height, the height of the tilting table being gauged therefrom and increased by graduated blocks. It will be noted that, in view of the double dislocation, the weight on each side will be taken on the tuber ischii and not on the axillae.

"In conclusion, I think that there is a very good chance of success in this case, difficult as it is, and that the girl will be able to walk in comfort with fairly normal gait.

"*X*-ray appearance (copied from *x*-ray report submitted).—The pelvis: Well developed, but of the android type. Hips: Congenital dislocation on both sides, and on the right side the head of the femur is separate from the shaft. The legs: On the right side the femur is very imperfectly developed, with a very short and thin diaphysis and the head developed separately from it; the parts below the knee-joint are all very rudimentary. The left shows a fairly well developed femur and tibia, but absent fibula."

I was rather surprised to see that Dr. Moxon suggested gradual straightening of the left limb. I felt that as the girl was to have an operation it would be better to straighten the left leg operatively, as it would be quicker and less tiresome for the patient. However, after discussing the matter we decided to do as the limb-fitting surgeon suggested. The limb-fitting was Dr. Moxon's work, and his arguments were as follows:

"It is not the intention to fit the girl's left leg into the socket of an ordinary artificial limb, as this could not be recommended as a practical procedure. Therefore, the preliminary straightening of the left leg for that purpose does not arise.

"The type of apparatus recommended for the left leg is in reality a combination of surgical instrument above, with the knee, shin, and foot of an artificial limb below. The *principle* of such an apparatus is illustrated on page 58 of 'Solvitur Ambulando,' but each individual set-up must differ in detail according to the requirements of the particular case of deformity under consideration. In this case it is felt that an instrument on this principle can be fitted to the girl's left leg with reasonable prospect of success without any preliminary straightening operation, open or otherwise. Preservation of her present mode of progression is in my opinion of prime importance.

"When not wearing the legs, or if the fitting of them should unfortunately be unsuccessful, she can still get about as before, which she certainly would not be able to do again if the left leg were previously straightened by operation."

Accordingly, on June 15, 1937, I removed about four inches of femur from the right stump together with a large amount of skin and subcutaneous fat and the two teats, using a posterior flap. The resulting stump was very satisfactory, being a much better shape and size for the fitting of a tilting-table leg (Fig. 2).

After three or four months she went to Roehampton, where she remained an in-patient for five months. The following is taken from a letter I received from Messrs. Hanger and Co., who supplied the patient's artificial legs:

"When Miss R. came to us, apart from a wheeled chair her only means of locomotion for seventeen years had been on her hands and haunches. It was found that the moment she was placed in an erect position on any form of temporary pros-

FIG. 2.

FIG. 3.

thesis, even a few inches from the ground, a sense of balance was entirely lacking and she became giddy. We gradually accustomed her to being off the ground at progressively increased heights, until eventually she was able to retain her balance when raised to her normal height of 5 ft. 1 in.

"For the deformity on the right side we provided her with a prosthesis of the normal type for an amputation involving disarticulation of the hip-joint, similar to that illustrated on pages 49 and 50 of our brochure 'Solvitur Ambulando.'

"For the left leg a special appliance was devised, comprising a thigh socket and surgical boot rigidly mounted to a ball-bearing knee-joint (embodying an automatic knee-lock) connected to a light metal shin-piece with an articulated foot and toe-piece.

"In designing these prostheses light weight combined with ample strength and practical efficiency were the essentials required for a successful result. It was found, however, that when she was first fitted she had not the slightest idea of how to walk; but she proved a very apt pupil, and in a short time had learnt the movements required.

"From this time she made rapid progress, and when she left our hands was walking distances of half a mile with perfect confidence and without undue fatigue, using two walking-sticks. She can walk with one stick, but at present it is inadvisable that she should do so. We think, however, that when she has become quite accustomed to these prostheses she will find only one stick necessary."

When I saw the girl in May, 1938, she was able to walk quite well on the level with the aid of one stick. She climbed by herself up a short staircase with complete self-assurance. Fig. 3 shows the girl and her new legs. When fully dressed she is to all intents and purposes an ordinary individual. Her whole outlook is changed, and

she is now a self-reliant girl with a place in life instead of being a circus curiosity.

She has an electric chair for taking her from one building to another, but, having arrived, she can now walk like other people and take a normal part in the work of the day. In her own words she says (July 5, 1938): "I can nearly do everything now, and do not ache so."

Since sending this article for publication I have heard (November, 1938) from the girl's doctor that she is now progressing with increasing freedom and is beginning to learn to dance.

I am very grateful to many who have helped me to bring about this result: my own staff, that of the Ministry of Pensions, Messrs. Hanger and Co. (the artificial-limb makers), and one whom I mention by name, the late Dr. H. R. (George) Moxon, who unfortunately did not live to see such a happy result of his advice.

Clinical Memoranda

Carcinogenicity of the Tar-Creosote Mixture used by Fishermen

This tar-creosote mixture was submitted for investigation by Dr. C. C. McKenzie of Campbeltown, who suspected it of being responsible for cases of cancer of the lip in the local fishermen. The carcinogenicity of the mixture was tested by painting the skin of thirty stock mice, in the interscapular region, three times a week. After the second application epilation of the whole painted area occurred. A severe dermatitis, resulting in ulceration, followed, the ulcers penetrating so deeply that scars were produced.

Twenty-one mice survived for longer than three months. The first papilloma occurred after 106 days. In his pathological report Dr. L. Woodhouse Price stated: "This is a keratinizing squamous epithelial papilloma, showing very early malignant change." Eleven papillomata developed in these mice from the 106th to the 249th day. By this time all mice had either died or had to be killed because of the extensive ulceration. The papillomata developed on the edges of the ulcerations, except in one case, in which the papilloma occurred within the ulcerated area. In the sections of the more recently examined tumours cell-nest formation and a good deal of deep infiltration are to be seen. Their histology is that of well-differentiated squamous carcinoma; however, the panniculus carnosus does not appear to be infiltrated with the tumour, which therefore is termed a papilloma malignum. In mouse No. 599 the lung showed macroscopically a definite tumour, and histologically the structure of anaplastic new growth, probably a lung adenoma, 197 days after the start of painting. It is known that the application of tar to the skin of mice increases the number of lung adenomata, as compared with controls.

There is no doubt that this tar-creosote mixture, which comes in contact with the lips of the fishermen, is carcinogenic. This source of occupational cancer can and should be eliminated. It is necessary either to produce a suitable non-carcinogenic tar, possibly by distillation at lower temperature than at present, or to educate the fishermen to abandon the habit of putting the bone or wooden needle, threaded with tarred twine, between their lips while mending their nets.

STEPHAN BECK, M.D.

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Reviews

GUIDANCE IN OBSTETRICS

Midwifery. By Ten Teachers. Under the direction of Clifford White, M.D., B.S., F.R.C.P., F.R.C.S., F.C.O.G. Edited by Sir Comyns Berkeley, Clifford White, and Frank Cook. Sixth edition. (Pp. 676; 262 figures, 9 plates. 18s. net.) London: Edward Arnold and Co. 1938.

The new edition of this textbook follows closely on the reprinted fifth edition published last year. Since then there have been extensive changes in the personnel of the "Ten Teachers" and minor changes in the book. The editor has reduced its size by discarding obsolete material contained in the previous edition. Further improvement is possible when two pages are devoted to each of such rarities as locked twins and pseudocyesis, and several pages contain an unconvincing attempt to differentiate between albuminuria of pregnancy and pre-eclampsia.

The illustrations throughout are excellent, and include four colour plates and five radiographs. One of these must be criticized for suggesting that dilatation of the renal tract is evidence of pyelitis of pregnancy. Students should have little difficulty in remembering the positions in face presentation, since the illustrations on page 304 rather suggest a Dictator extricating himself from a difficult situation. Those with more "left" tendencies will find solace in the clenched fist on page 327.

Cervical polypi are not included as a cause of bleeding in pregnancy; transfusion is not mentioned in treatment of severe cases of obstetrical shock, melaena neonatorum, or familial jaundice; nor is vomiting included in the list of danger signs during the later ante-natal period. The dosage of ergometrine advised for post-partum haemorrhage is small and its action is incorrectly stated to be slow. Many obstetricians will disagree with the statement that it is quite unnecessary to displace the foetal head during manual rotation from a posterior position. Omission of the preliminary step of disimpaction is a frequent cause of failure to accomplish the operation, and is the indirect cause of many difficult and dangerous face-to-pubis extractions. Conservative opinion will regret that a breech with extended legs in a primigravida—even in twin pregnancy—is now a "rational indication" for Caesarean section, and that this rule should not be broken unless the infant is premature. So much by way of criticism.

This book is a well-established favourite with students, and the new edition is certain to be as popular as its predecessors and perhaps even more helpful.

MODERN SURGERY

The Essentials of Modern Surgery. Edited by R. M. Handfield-Jones, M.S., F.R.C.S., and A. E. Porritt, M.A., M.Ch., F.R.C.S. (Pp. 1,126; illustrated. 30s.; postage 10d., abroad 2s. 3d.) Edinburgh: E. and S. Livingstone. 1938.

This is a single volume, the composite work of fifteen authors, six of whom, including the two editors, are on the staff of St. Mary's Hospital, while with one exception (Mr. Walter Mercer of Edinburgh, who writes on deformities) the others are also London surgeons. Its scope is comprehensive: chapters on physiotherapy and radiotherapy, venereal diseases, diseases of the skin, diseases of the female genital organs, the ear, and the affections of the nose and accessory sinuses are included in addition to those on general surgery, which for the most part is dealt with on a regional basis. The format is attractive, the text clear, and the print large and easily

readable, while the illustrations, which include photographs of patients, apparatus, and pathological specimens as well as *x*-ray prints and line diagrams, are interspersed with the text and the whole is produced on art paper.

The editors tell us in their preface that their object has been to provide students and practitioners with the essentials of modern surgery in as concise a form as possible, and also to produce a book which will be of use to students studying for higher examinations. In large measure they may be said to have achieved these objects, though in common with all works of multiple authorship this book necessarily lacks the consistent style of the text of a single author or of those famous old dual authorship works such as Rose and Carless and Thomson and Miles. While certain sections are models of what concise accounts should be for a student, the same cannot be said of all. It is rather disappointing to find included in such a limited work illustrations and accounts of surgical curiosities or rarities, since the student tends to gain a wrong perspective therefrom and to regard these as of everyday occurrence: as examples may be cited a picture of an enormous adventitious bursa over the left shoulder, while photographs of a dislocated shoulder or of a lipoma in this region are missing. The statement (p. 324) in reference to thyrotoxicosis that " in every case a routine examination will search for focal sepsis and appropriate treatment be directed to any such lesion " might be qualified, since patients have succumbed to tonsillectomy performed in this condition instead of an attack being made on the thyroid in the first instance.

We regard the chapters on the ear and on the brain and its coverings as some of the best in the book, and the latter section is particularly well illustrated. The inclusion of prescriptions such as those which appear on pages 200 and 201 is pleasing, and past and present students of St. Mary's will be interested in Fig. 68 (p. 206) and its legend, which reads: " Rhinophyma. A man known to many generations of students of St. Mary's Hospital." Considered as a whole this book has much to recommend it, and it should take its place as one of the students' standard textbooks of surgery.

HAEMORRHOIDS AND THEIR TREATMENT

Haemorrhoids. By Marion C. Pruitt, M.D., F.R.C.S.Ed., F.A.C.S. (Pp. 170; 73 figures, including 7 in colour. 18s. net.) London: Henry Kimpton. 1938.

Dr. Pruitt has succeeded in writing a simple and clear treatise on the subject of haemorrhoids. A good classification of types of haemorrhoids is given, and it is rightly pointed out that as there are several types no one method of treatment is suitable for them all. Spinal anaesthesia used as routine for operative treatment is thought undesirable and local anaesthesia is favoured. It is surprising to note that oedema is considered the reason for irreducibility of a haemorrhoid and that suturing of the subcutaneous tissues may be carried out after excision of an external haemorrhoid. The author recommends urgent haemorrhoidectomy for uncomplicated irreducible internal haemorrhoids when there is a risk of strangulation, etc.; but this must be quite unnecessary when simple and effective methods are available. The chapter on injection treatment pays too little attention to the minute details of the technique and too much to the history of the injection method. A trained assistant is hardly necessary for so simple a procedure. In dealing with the submucous method of injection, injection above the haemorrhoid is not mentioned, neither is the combination of this method with injection into the pile mass considered. The author states that the result of injection in third degree haemorrhoids is almost as good as operation, and places the number of cures of haemorrhoids by the injection method at 80 to 90 per cent. This is indeed optimistic! The section on operative methods includes a description of Whitehead's operation and the clamp and cautery methods, neither of which has a place in the modern surgery of haemorrhoids.

This book, though containing much in the way of repetition, will be of use to the general practitioner because of its easy and clear style.

INFECTIVE BULBAR PARALYSIS

La Maladie d'Aujeszky. By P. Remlinger and J. Bailly. (Pp. 202. 45 fr.) Paris: Masson et Cie. 1938.

Infective bulbar paralysis or pseudo-rabies was not recognized as distinct from rabies until 1903, when Aladar Aujeszky established its virus nature as distinct from that of rabies. It occurs among dogs, cats, cattle, pigs, sheep, and horses in nature, but man appears to be very resistant. The authors of this, the only existing monograph on the disease, have collected a few cases of infection, almost all very slight and abortive, in laboratory workers. This veterinary disease has an incubation period of from thirty hours to eight days, a short fatal course of three days, with a brief paralytic phase before death, which usually occurs during the night. An outstanding manifestation is pruritus, which in North America has earned for the disease the name of " the mad itch." In one of the human cases there was pruritus for two days; there does not appear to have been any fatal case in man. The authors of this monograph, who are in charge of the Pasteur Institute at Tangier, have contributed a pleasantly appreciative memoir of Aladar Aujeszky (1869–1933), a medical man and a veterinarian, author of 528 publications, professor of bacteriology, and director of the Bacteriological Institute of Hungary.

CARDIORADIOLOGY

Orthodiascopy. By Chester M. Kurtz, M.D., F.A.C.P. (Pp. 247; 67 figures; 31 tables. 15s. net.) London: The Macmillan Company. 1937.

With the development of cardioradiology to a point where it can be regarded as equal in importance to clinical and electrocardiographic methods many monographs dealing with this aspect alone are appearing. The subject is now a very large one, and an expert knowledge of the form of the heart in health and disease can hardly be attained except by those who limit themselves to this department of radiology. In his monograph based on 1,700 orthodiascopic examinations Dr. Kurtz first describes the techniques used, and includes a method for projecting the cardiac outline on the anterior chest wall, which, as he admits, may be omitted with little loss. The opportunity which such a projection gives the observer for checking his percussion findings will be welcomed only by those who still retain their belief in this clinical method.

In a chapter on heart size, comparison of the frontal cardiac area with the predicted normal, based on height, weight, and age, is preferred as the most reliable of the various methods of measurement, though it is pointed out that in border-line cases the method can only indicate the probable presence of abnormality or otherwise. The changes in rheumatic heart disease are well described, though the projection on the left border below the pulmonary artery commonly seen in mitral stenosis is referred to as the left auricular salient, while post-mortem observations show that this is usually formed by the conus of

the right ventricle. The section on aortic syphilis deals too briefly with the earlier lesions; in contrast to the great stress laid on cardiac measurement there is no reference to aortic measurement, which is admittedly difficult. In the final chapters coronary and hypertensive and congenital heart disease are very briefly considered. The aortic changes in hypertension appear to be regarded as predominantly due to dilatation, whereas the usual view is that an uncoiling of the arch is the important factor.

In this country, while radioscopy of the heart is being more and more widely used, the tendency is to use teleradiographs rather than orthodiagrams when a permanent record is required, and the few radiographs reproduced in this book show their superiority to orthodiagrams. The monograph is suitable for those seeking an introduction to the subject, provided they shift the emphasis placed by the author on measurement of cardiac area to changes in form.

PUBERTY, NORMAL AND ABNORMAL

La Puberté : Étude Clinique et Physiopathologique. Edited by Guy Laroche. (Pp. 349; illustrated. 65 fr.) Paris: Masson et Cie. 1938.

This is a composite volume edited by Dr. Laroche, who contributes a chapter on normal puberty and its deviations from the normal time of arrival. Next is a chapter on sexual hormones and then one on pubertal intersexuality, the author of which concludes that there is normally an intersexual phase in boys but not in girls. This phase in boys may be characterized by certain physical characteristics, by a frank homosexuality, or by an indifference to the sexual object. From this phase originates almost all future sexual inhibition. In girls there is never anything but an indifferent phase which may accidentally produce homosexuality. He thinks the cause is almost exclusively endocrine. Then follow chapters on vasomotor and cardiovascular disorders, in relation to which it is necessary to distinguish between the rheumatic heart and the benign irritability of the adolescent's heart. Digestive disorders, tuberculosis, and goitres are dealt with, and then infantilism in the male and menstrual disorders in the female. The difficult subject of obesity at puberty is dealt with clearly, and the conclusion is that while many cases are due to a nutritive factor there is a group, often very difficult to treat, due to pituitary disorder, though chromophobic tumours are rare. The chapter on psychoneurosis is somewhat sketchy, and the author blames the instability of the environment, especially of recent years, as the chief causal factor. There are chapters on cellulitis, diseases of bones and ligaments, eye trouble, and skin reactions at puberty, and finally nutrition, physical exercise, and physiotherapy are discussed.

A book such as this may lack something of coherence, since it ranges over so many subjects. Nevertheless many doctors will find it a useful volume to have on their shelves, since it contains much useful information (which may be difficult to find in more orthodox textbooks) on subjects that must constantly crop up in day-to-day practice.

Notes on Books

Hearing: its Psychology and Physiology, by Drs. STANLEY SMITH STEVENS and HALLOWELL DAVIS, is published in London by Chapman and Hall at 22s. 6d. There have been greater contributions to knowledge concerning hearing in the last fifteen years than in the preceding fifty. This book gives a valuable account of the present position in this field, which is on the borderline between physics and physiology. It is to be hoped that in the next decade it may prove possible to apply some of the new knowledge to elucidate the problems of deafness.

Dr. J. W. THORNTON, lecturer in pharmacology, Bristol University, has prepared imperial and metric conversion scales, constructed logarithmically from tables in the *British Pharmaceutical Codex*. Their purpose is to minimize the inconvenience caused to scientific workers by the simultaneous operation of the two systems of weights and measures. Quantities given in either system may be read at a glance in the other without need of tables or calculations. The seven scales on this one wall card cover all the everyday needs of doctor, dispenser, or research worker. It is published by John Wright and Sons Ltd., Bristol, price 6s., postage 6d.

Series XXXIII of *The Harvey Lectures* delivered under the auspices of the Harvey Society of New York is published at Baltimore by the Williams and Wilkins Company and in London by Baillière, Tindall and Cox, price 18s. The eight lectures in this series cover a wide field in physiology and allied subjects. Thus Selig Hecht, professor of biophysics, Columbia University, discusses the nature of visual processes, Einar Lundsgaard, professor of physiology at the University of Copenhagen, considers the Pasteur-Meyerhof reaction in muscular metabolism, and Dr. W. M. Stanley writes on the isolation and properties of tobacco mosaic and other virus proteins. Of more direct interest medically are Professor Goldblatt's account of experimental hypertension induced by renal ischaemia and Professor F. C. Koch's lecture on the chemistry and biology of the male sex hormones.

Preparations and Appliances

NEW INTRAVENOUS CANNULA

Mr. C. J. C. SIGGERS (Resident Surgical Officer, St. Mark's Hospital for Diseases of the Rectum) writes:

The cannula about to be described is a modification of that devised by Marriott and Kekwick. Their cannula was a great advance on previous designs, but the expanded tip was so large that it was very difficult to introduce into any but the largest veins. To facilitate the entry of the cannula into the smaller veins I had one made for me with a narrow extension beyond the bulb (see Fig.). This narrow bevelled extremity can be introduced into very small veins quite easily,

and once the tip is in the bulb will slip in without difficulty and the ligature can be tied behind it. A theoretical objection is that as the terminal opening is oblique it may be more easily occluded by the wall of the vein than if it were cut off square. Actually, this does not seem to happen in practice, owing probably to the fact that one is able to fix the cannula so that it lies in the correct alignment in the vein with the tip free. The diameter of the cannula at the tip is 2 mm. and at the widest part of the shaft 4 mm.; the length of those supplied has been just under 7 cm. Other sizes could be made to order, but this size will be found convenient in most cases. A larger size is not really necessary, and a smaller size should only be needed for babies and very small children. The cannula was made for me by A. L. Hawkins and Co., Ltd., of 15, New Cavendish Street, London, W.1.

MEDICAL ADVANCES IN SOVIET RUSSIA

At a meeting arranged by the Society for Cultural Relations with the Union of Soviet Socialist Republics, held at the Royal Society of Arts, London, on December 8, Major-General Sir CUTHBERT SPRAWSON, who paid a visit to Soviet Russia in the summer of this year, gave an account of his experiences there, particularly with reference to medical education and to the campaign against tuberculosis. He spoke as one who had been interested for many years in medical education in India, where he had been President of the Medical Council, and he found certain analogies between these two great, mainly agricultural, countries, both of which had been backward, though India, he said, was advancing slowly and Russia making rapid progress.

Medical Education

Sir Cuthbert Sprawson said that he was surprised to find one thing in common between Russia and India, in that both had a dual standard for medical education. In addition to the fully qualified graduates, both countries had a class of practitioners with lower qualifications, known in India as "licentiates." The origin of this class of lower status dated from the old army days, when most regiments going out on service did not have a fully qualified medical officer. The system was gradually abolished in the rest of Europe, but was retained in Russia, and up to the time of the European war this class of practitioner outnumbered the fully qualified in the proportion of three to two. The position now was reversed, and an endeavour had been made to abolish the inferior class altogether, but the shortage of practitioners was too acute to allow of this.

He went on to speak of the provision for medical students in Leningrad. In the institute which he visited in that city there were 3,000 students, more than half of them women. The institute had an attached hospital of 1,200 beds, and access to another nearly as large, but this provision did not seem enough for the teaching of 3,000 students. For the laboratory work the students were divided into batches, and four shared a single microscope. The position with regard to midwifery was easier, because every woman went to hospital for her confinement, and each student was expected to take ten cases before qualification. In the Soviet Union there were seventy-two institutes for medical undergraduates, not, of course, all as big as those in Leningrad and Moscow.

The Curriculum and Specialties

The time spent on the curriculum was shortened by earlier specialization in public health and hygiene, and the student taking these subjects was sent to a special institute for the purpose. During the first three years of the curriculum all the students did the same work; then they selected their special branch—general medicine, paediatrics, or public health—in which they continued for two years. But those who took public health continued at their special institute to receive instruction in general medicine also, though they did less clinical work than those who undertook the general medicine course. Of 25,000 medical students in the Union this year, 4,000 had chosen paediatrics, 3,200 public health, and the remainder general medicine. Students could, however, practise general medicine even if they had chosen one of the special fields, and the whole arrangement was in a state of experiment. The authorities admitted the disadvantages due to the present overcrowding, but it was hoped this might be remedied later and a six-year course (instead of the five-year course for full medical undergraduates) be instituted. The chief concern at the moment was to increase the number of qualified practitioners. In 1914 there were 25,000 graduate doctors, now there were 107,000, but these in a population of 170 millions gave only one doctor to rather fewer than 1,600 people. The Government was aiming at one doctor per 1,000 of population.

In Russia there was only here and there any private practice; on the whole it was a State service. During his first year every doctor had to go where he or she was sent, and the best students were sent to the most out-of-the-way places, on the supposition that these people would be the most self-reliant. At the end of the year they could go, within limits, where they pleased, and there was no difficulty in getting them to go to the rural areas, for in the less desirable places the pay was higher, they had more holidays and privileges, and they were allowed to keep a car—and also a cow. There was excellent post-graduate training, and every doctor was supposed to have a refresher course of from three to six months every three years; how it was managed administratively he did not know. There were ten special hospitals in the Union for postgraduate courses.

Russia's Anti-tuberculosis Campaign

Sir Cuthbert Sprawson then gave some particulars of the "drive" against tuberculosis. The remarkable thing was that a notable decline in tuberculosis mortality had coincided with an increased industrialization and urbanization. The population of Moscow before the war was 1½ millions; it was now 3½ millions. In 1913 the tuberculosis mortality in Moscow was 22.6 per 10,000; it was now between 10 and 12. In Leningrad in 1913 it was 28.6, and now had been reduced to 12.0. In Kharkov in the Ukraine in 1923, when the campaign started, it was 17 per 10,000, and in 1937 had fallen to 12.0. As part of their third five-year plan the Soviet Government had set itself the stupendous task of halving the mortality of a chronic disease, but such surprising success had been made of it so far that one could not say it was impossible. The number of physicians employed in the sanatoria and tuberculosis dispensaries was 27,000, which meant that one doctor in every four in Russia was a tuberculosis specialist. Special tuberculosis teaching was given to all undergraduates, and postgraduate courses in the subject were given to 500 practitioners every year.

The institutional provision included central and regional tuberculosis institutes, sanatoria, special hospitals and special wards in general hospitals, labour prophylactoria (analogous to Papworth), and special schools for children. The sanatoria on the whole were like sanatoria anywhere else, and situated in attractive country. An interesting institution was the night sanatorium for patients who had had the disease and were back at work, but slept at the institution. The dispensaries were the front line of the attack, and there were 800 of these altogether in the Union. Their chief function was to detect early cases. The central and regional institutes directed the campaign, carried out research, collected statistics, published literature, and generally advised the units. Research was going forward with a view to finding out how much work a tuberculous patient could do. A good deal of use was made of B.C.G. as an immunizing agent, and some of the success of the campaign was attributed to that. In certain cities vaccination was compulsory for children likely to be exposed to infection. Altogether, Sir Cuthbert Sprawson left an impression upon his audience of an intensive campaign proceeding on many fronts, and one which, having regard to the vastness of the country and its recent backwardness, was being attended with astonishing success.

The nineteenth Salon des Médecins for the exhibition of works of art by doctors, veterinary surgeons, dentists, and pharmaceutical chemists will be held at 21, Faubourg Saint-Honoré, Paris, from February 19 to March 5. Further information can be obtained from the general secretary, Dr. Pierre-Bernard Mallet, 67, Avenue Pierre-Larousse, Paris.

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ARTERIOSCLEROSIS

Since diseases of the heart and blood vessels now head the list of causes of death, chiefly because of the increased expectation of life brought about by improved hygiene, a new study of the biology of arteriosclerosis[1] is worthy of attention. The authors, who are members of the department of pathology of Yale University School of Medicine, have brought together an account of original work on the blood vessels and their diseases, when their structure is elucidated by the use of clearing agents of variable chemical composition. The dehydrating effect of glycerin, the defatting action of alcohols, ether, and benzene, and the decalcifying capacity of acids may be used either separately or combined. Injection may be carried out before clearing, and in this way the minute details of the vasa vasorum may be demonstrated. Investigation of the extent of these vasa vasorum in the past has given no clear indication of their relation to the nutrition of the vessel wall, either in health or in disease, extremes of opinion holding that they supply only the outer coats of the vessel walls, or, on the other hand, that they are responsible for the nourishment of all of the coats, including the intima. Apart from syphilis there appears to be no distinct cause for changes in the vessel wall, and the inability to reproduce the morbid process experimentally has led to the anatomical attack on the problem. Winternitz, Thomas, and LeCompte found that, using fresh material from the necropsy table, evidence was soon obtained that the diseased vessel wall is quite vascular. Minute haemorrhages and small capillary networks in the region of arteriosclerotic plaques were easily demonstrated by the use of injection and clearing methods on the aorta, the vessels of the extremities, the cerebral vessels, and the coronary arteries. Similar methods applied to the blood vessels of young people who had succumbed to injuries or diseases unrelated to the cardiovascular system showed the vasa vasorum to be by no means so readily demonstrable as in the diseased vessels. An extensive vascular network has been found by these workers in the normal blood vessels of a number of animal species, and in the veins of human young people the vasa are exceedingly numerous. The origin of these anastomosing mural vessels has been traced from three separate sources—the adventitia, the region of orifices of branches, and directly from the lumen of the vessel. Blood capillaries are found running through all the coats of otherwise unchanged human vessels. The regularity of their pattern and arrangement points to their having at least a potential function in the walls of normal arteries. Loss of elasticity with age and the arteriosclerotic process are independent.

The cause of arteriosclerosis is unknown and is probably not to be found in one single factor. But an approach to the problem which is based on recognition of the artery as a vascular or potentially vascular organ, and therefore subject to the same pathological processes to which other tissues are subject, is the thesis which Winternitz, Thomas, and LeCompte have attempted to set up. Recognition of the existence of vascular channels in the wall of the blood vessel alters the conception of the reactions of this tissue to injurious agents. The response to injury is through the capillary bed and is manifested by two more or less distinct and variably proportioned reactions: exudation and proliferation. Exudation may include serum and cellular elements, and be further complicated by the precipitation of fibrin. Proliferation consists of new formation of blood vessels and connective tissue elements, including fibroblasts and many varieties of mononuclear cells. Evidence of mild exudation in the intima is not infrequent. These exudates are of little significance unless they are massive and cannot be removed promptly. Haemorrhage is but an exaggerated form of exudation and is readily recognized in the cleared tissue, because of the colour. It is common in the artery wall and is found in those places which are the site of predilection of arteriosclerotic lesions. It has been pointed out that the normal site of vasa vasorum and the network of capillaries which can be injected is at the origin of branches. This association of haemorrhage, vascularity, and arteriosclerosis cannot but be significant. The authors hope that their study will bring the subject out of the limbo of degenerations into the region of known biological phenomena. In the blood vessel wall, as in so many other areas where the inflammatory process manifests itself, the different elements of both the exudative and proliferative processes vary greatly, and the basis for the separate pictures must be dependent in part upon the specific chemical substances that are active. These agents may be limited in amount or may act as catalysts. They may be derived from exogenous agents, including parasites of various

[1] *The Biology of Arteriosclerosis*. By M. C. Winternitz, M.D., R. M. Thomas, M.D., and P. M. LeCompte, M.D. Baltimore: Charles C. Thomas. (4 dollars.)

kinds, or they may be endogenous—the product of cell disintegration or organ function. Such an endogenous agent or agents must be responsible for the closure of the ductus arteriosus; the similarity of this to the arteriosclerotic process is pointed out by the authors.

The problem of thrombosis is closely associated with that of disease of the artery wall. The various exudative and proliferative phenomena may take place in the vessel wall under an intima that is intact. Such diseases may be extensive enough to cause narrowing of the lumen, and fibrin may be deposited either within or on the surface of the intima. Careful study of the thrombi encountered indicated that the vast majority occur at the site of recognizable pathological change. Haemorrhage alone or associated with other change in the vessel wall is a common finding. The thrombus often arises as the result of injury to the intima, probably where the branch penetrates the aorta. Organization of the clot in the lumen of the vessel occurs, and it is suggested that the circulation may be restored, partially at least, by canalization of the clot with new vessels or by dilatation of the preformed vasa vasorum bringing about a collateral circulation in the wall of the affected vessel itself. The authors have produced a most interesting and suggestive monograph, and their demand that a revised attitude towards disease of the vessel wall should be adopted is likely to lead to much clearer definition of the problems of the biology of arteriosclerosis.

LIGHTING IN FACTORIES

The fourth report of the Departmental (Home Office) Committee on Lighting in Factories[1] is a thoroughly good document; and one that, if the recommendations contained therein are followed, will secure for workers and for employers real advantages. The report begins with a short historical survey. At the beginning of the present century, it says, very little was known about technique or measurement of illumination. That statement forgets the initial work done by school doctors; but so far as factories are concerned it is true. Credit is given to the initial work of Mr. A. P. Trotter of the Board of Trade, and Mr. Leon Gaster, the founder of the Illuminating Engineering Society. The report shows that industrial lighting conditions have improved on the whole and are still improving (especially with the readier access to gas and electricity in rural areas), but in spite of the facilities available many factories are still very badly lit.

[1] H.M. Stationery Office. 1s.

Adequate lighting of industrial premises has been compulsory for many years in several countries, but in Great Britain for a few trades only of an especially hazardous nature. Vision depends first on light. But there are many other factors involved: the size and detail of the object, the duration of observation, the degree of contrast, colour, and the amount of light available. Modern lighting with its brilliant lamps has introduced a new difficulty. It develops contrast greatly, and an excess of this will cause the unsatisfactory conditions usually termed "glare." Bad lighting by daylight may be due to old and unsuitable buildings, obstructions of other buildings, dirty windows and dirty walls of the workshops. Bad lighting by artificial methods means too few or too weak sources of light, antiquated equipment such as naked fishtail gas-burners, dirty fittings, and absence of proper screens or reflectors. Statistical investigations by the committee have shown that accidents of certain types occur more frequently in winter months when daylight hours are fewer and when bad conditions of lighting prevail. Permanent damage to eyesight and to health can result from working in ill-lit places. Dark cooking places mean insanitary production. Good lighting has been shown to cause substantial improvement in discipline and moral behaviour. Lastly, the effect of bad lighting upon both quality and quantity of the work is extremely pronounced, and numerous scientific investigations have shown the relation between output and standards of lighting.

The recommendations of the committee are thoroughly sound and quite practicable. There is no place where they cannot be carried out effectively. Perhaps the most important, in view of the increased use of lamps of high specific intensity, are these: "(iv) Where any light source in a factory is less than sixteen feet above floor level, no part of the source or fitting having a brightness greater than ten candles per square inch shall be visible to any person whilst normally employed within 100 feet of the source, unless the angle of elevation from the eye to the source exceeds 20 degrees. (v) All local light sources in a factory shall be provided with suitable shades of opaque material or other effective means by which they shall be completely screened from the eyes of every person employed at a normal working place." It is to be hoped that the recommendations of this report will be carried out; the Home Secretary has the necessary power in the Factories Act, 1937, Section 5, which declares: "The Secretary of State may, by regulations, prescribe a standard of sufficient and suitable lighting for factories or for any class or description of factory or parts thereof, or for any process."

PRISONS AND PRISONERS

The report of the Commissioners of Prisons and Directors of Convict Prisons for 1937[1] shows only a slight change in the number of receptions into prison. The total receptions of men were just over 42,000 and of women just over 5,000; the men showed a slight increase as against 1936 and the women a slight decrease. Only 19 per cent. of men and 10 per cent. of women were sentenced to imprisonment for more than three months. Most of the short-sentence prisoners had already been convicted, and the report is not a good advertisement for the constructive value of the prison system. The effect of the Criminal Justice Bill, when it becomes law, remains to be seen, and it will be decidedly interesting to compare the reports of a few years hence with this one. The new Borstal colony at Hollesley Bay in Suffolk came to life on May 2, when the first party of lads arrived, and the numbers are being increased as rapidly as possible, consistently with the need to build up a proper discipline and tradition. The main activity of the colony is fruit-growing, but it also has a large mixed farm. It has the advantages of being well away from any large centre of population and of providing much heavy and useful outdoor work. It is very big, and the Commissioners will be able to make the experiment of dividing the lads into five separate houses, each containing not more than sixty. The houses will be some distance apart and the lads will only go to the central building for purposes such as education and bathing. The New Hall camp attached to Wakefield prison now has about eighty resident prisoners, and parties of twenty are taken there every day. The men now breed pigs on the hut principle, keep poultry, and cultivate soft fruit. The report points with pride to the small figure for reconvicted prisoners since 1931—18 per cent. The figures for corporal punishment for prison offences show a progressive decline since the beginning of the century. In 1937 only two prisoners were so punished in convict prisons and none in local prisons. Under the extensive reorganization which is proposed the women prisoners will be removed from Holloway and the Borstal girls from Aylesbury. It is proposed to build colonies, preferably adjoining though completely separated, for these prisoners somewhere in the country near London. The aim is to provide institutions with opportunities for healthy outdoor work and exercise for as many inmates as possible. They will be housed in small groups, allowing better classification and greater individualization. The environment will be more open, and the Commissioners are confident of developing still further the ideas of training and reformation which have been devotedly pursued by the staff under the handicap of old and unsuitable buildings. The report contains an account by Dr. Mannheim and Mr. Dryden Donkin of their research into the records of Borstal institutions: this deals with causes of juvenile delinquency, and especially stresses the bad effect of fines, birchings, and short-term imprisonment. They cannot confirm the popular belief that delinquency is caused to any appreciable extent by films, gambling, crime stories, or a number of other causes ascribed by popular belief. The report mentions with regret the retirement of Dr. W. Norwood East, the Medical Commissioner, who joined the prison service in 1899. Under his direction prison hospitals have been modernized, extended, and rebuilt. He fully recognized the growing importance of the psychological aspect of medical work in prisons, and under his wise guidance considerable advances have been made in recent years. He is even now preparing, with Dr. W. H. Hubert, a report on the results of the four-year programme of investigation and treatment for selected prisoners which he instituted at Wormwood Scrubs. He has been succeeded by Dr. J. C. W. Methven.

[1] Cmd. 5868, H.M. Stationery Office, 1938. (2s.)

MEASLES VIRUS

The virus of measles is one of the most important of those agents causing disease in man, yet it is one about which comparatively little is known. Some authorities would even hesitate to place it in the group of filterable viruses, though that does not mean that there is any serious belief nowadays in the aetiological importance of the coccus of Tunnicliff or the micro-organism of Caronia. This hesitation is merely due to a lack of positive evidence, the direct result of not possessing a suitable experimental animal for measles research. And although Blake and Trask in 1921 left little doubt of the susceptibility of the rhesus monkey, the cost of these animals and the variability in their response to measles virus have proved a deterrent to their use in research. Had it been possible to grow measles virus in tissue culture with the production of some recognizable histological change, this might have compensated to some extent for the lack of a suitable experimental animal, and when, after the lead given by Goodpasture, use was made of the chorio-allantoic membrane of the developing hen's egg for the cultivation and study of viruses hope arose that this method might prove suitable for research into measles. This hope found some encouragement in the report by Wenckebach and Kunert[1] last year that measles virus could be grown in this way. So far, however, no confirmation of this work has been forthcoming. Plotz[2] now reports that he has succeeded in growing measles virus in a medium consisting of minced chick embryo tissue in Tyrode's solution with the addition of monkey serum: 5 c.cm. of minced embryo in Tyrode's solution and 1 c.cm. of monkey serum were placed in a 50-c.cm. Ehrlenmeyer flask; 1 c.cm. of defibrinated measles blood and a few drops of hen plasma were then added, and the flask was closed with a rubber cork. Cultivation was at 37° C. with subcultivation every three days, 1 c.cm. of the ground-up culture being used to seed a fresh flask of medium. With the tenth subculture, which represented a dilution of 7^{-10} of the original blood, a rhesus monkey

[1] *Dtsch. med. Wschr.*, 1937, **63**, 1006.
[2] *Bull. Acad. Méd.*, Paris, 1938, **119**, 598.

was inoculated subcutaneously, the dose injected being 5 c.cm. Ten days later the animal appeared ill, and there was an extensive maculo-papular rash which persisted for three days. The total white cell count, which had risen rapidly to over 30,000 after the inoculation, fell to 7,500 on the eighth day and persisted at this low level, the differential count showing a lymphocytosis; there was little pyrexia. Dr. Plotz believes that the monkey suffered from an attack of measles, and as the possibility of this being due to a residual virus is ruled out in view of the dilution of the original blood in the process of subcultivation, he is of the opinion that the measles virus had multiplied. The evidence in support of this conclusion is meagre, but Dr. Plotz is no doubt pursuing this line of work, and the results of a more extended series of experiments will be awaited with interest.

CARCINOGENIC HYDROCARBONS

There are three landmarks in the study of pure carcinogenic substances of known chemical structure—namely, the original demonstration of moderate carcinogenic activity in the pure hydrocarbon 1:2:5:6-dibenzanthracene, the identification of 3:4-benzpyrene as the carcinogenic agent in coal tar, and, finally, the synthesis of the highly carcinogenic methylcholanthrene from bile acids. It is not proved that methylcholanthrene can be produced in the human body, but there is an evident possibility that if natural constituents of the body can provide starting-points for the laboratory synthesis of carcinogenic substances they might be transformed within the body into the same or similar substances capable of producing cancers of diverse kinds. These investigations initiated in London at the Royal Cancer Hospital are being vigorously pursued throughout the world, and recent reviews by Cook and Kennaway[1] and by Fieser[2] show how much has been, and how much remains to be, accomplished. Pure carcinogenic hydrocarbons, especially the three already mentioned, are in widespread use for the investigation of many aspects of carcinogenesis and open the way to more precise and quantitative experiments. The specialized chemical investigations are inappropriate for detailed analysis here, but some aspects deserve mention in general terms. A large number of hydrocarbons of related structure have been prepared and tested, and important progress has been made in the elucidation of the fine details of chemical structure which determine carcinogenic activity. It is now evident, however, that while most of the active substances so far examined are derivatives of 1:2-benzanthracene, this type of structure is not essential; compounds of widely different structure are carcinogenic. It is possible that carcinogenic power, though not dependent on a specific chemical structure, is determined by a particular kind of chemical reactivity shared by compounds of dissimilar structure. Early studies of the chemical properties of the carcinogenic hydrocarbons yielded no more clues to their mode of action than did their chemical structures. Fieser records the beginnings of a more promising attack on this problem. It is known that the compounds undergo rapid change in the body; the chemical change, which may be small, apparently exhausts most of the carcinogenic substance long before tumours begin to appear, and may represent the first step in a complicated chain of events leading eventually to malignant growth. Fieser and his colleagues at Harvard found that the most potent carcinogens belonged to a small group of chemical compounds with unique chemical properties and surpassing all other known aromatic hydrocarbons in chemical reactivity of a special kind, notably a high degree of susceptibility to substitutions of a special type and to oxidation with lead tetra-acetate. Fieser suggests that the first reaction which occurs in a carcinogenic substance in the animal body might be one of hydroxylation or of the substitution of some related group, and that the introduction of an active functional group might provide a mechanism for the conjugation of the carcinogenic substance with substances present in the organism. As Fieser concludes, whether or not these speculations are valid, they suggest various lines of investigation which seem natural and worthy of trial.

[1] *Amer. J. Cancer*, 1938, **33**, 50.
[2] Ibid., 1938, **34**, 37.

RECREATIVE PHYSICAL TRAINING

The third annual report of the Central Council of Recreative Physical Training covers the period September 1, 1937, to August 31, 1938, and with excellent illustrations as well as in its text reveals the great efforts made by this organization to improve the physical and mental health of the community through physical recreation. Careful and systematic preparations were started to explore the possibilities of elaborating practical and comprehensive schemes in various parts of Great Britain which shall include all physical activities, both outdoor and indoor, and the requisite principles and details are now being formulated. Training courses for leaders have been organized and conducted, while some already in being have been stimulated and assisted, and grants amounting to £6,000 have been allocated to this council by the National Fitness Council. Pending the creation of more full-time salaried posts, the council has had to concentrate on the provision of short courses, mainly in the evenings or at week-ends or during the vacations. While forty of these were held in the year ending August 31, 1937, no fewer than 125 were held in the succeeding twelve months, and they were attended by between six and seven thousand men and women. Courses lasting three months were held at Anstey Physical Training College and Loughborough College for those who had already some knowledge of physical recreative activities. Some of these students have now returned to their home towns as organizers, while others are holding part-time posts. Men's training camps have continued to be a feature of the programme of the Central Council. Many demonstrations and lectures have been given, with follow-up work afterwards, so that enthusiasm may

bear practical fruit. The report warns against the danger that demonstrations designed to stimulate "crowd emotion" may seriously mar the integrity of physical training as a means of recreation of brain and body. and as part of the general education of the adolescent and adult. Play leadership is regarded by the council as a logical and essential forerunner of the development of games for adolescents and adults, and four training courses and sixteen demonstrations were arranged during the year under review—for instance, one by 2,000 children was held in Regent's Park, London. The use of fields and spaces for recreation has to be associated with instructed leadership in the games and physical activities, and the Central Council sent representatives all over the country to examine possibilities and to advise. There is an obvious need for a larger and better central source of information on technical matters relative to physical education, and the staff of the Central Council are being kept very busy answering inquiries from all over the British Isles. The report (obtainable from the offices of the Central Council for Recreative Physical Training, Abbey House, Victoria Street, S.W.1) ends with a survey of what has been done in the various counties in Scotland and Ireland and the Isle of Man.

ACUTE INFECTIVE POLYNEURITIS

Widespread inflammatory and degenerative lesions of the peripheral nerves have usually been grouped together under the convenient term "polyneuritis." But apart from the polyneuritis caused by exogenous toxins little or nothing is known of the pathogenesis of most of the other conditions included under this designation. In a recent study of cases of polyneuritis called by French clinicians the syndrome of Guillain and Barré, or *polyradiculo-névrite avec dissociation albumino-cytologique*, several workers[1] describe the clinical features in detail, point out its possible epidemic occurrence, and discuss its pathogenesis and the differential diagnosis from poliomyelitis. In the cerebrospinal fluid there is always an increase of protein without any corresponding increase of cells. The almost uniformly favourable prognosis explains the absence of post-mortem observations. These cases have usually been included by English clinicians under the general classification of acute infective polyneuritis; some show a high cell count in the cerebrospinal fluid as well as increased protein, are relapsing in character, and often end fatally. Whether there is any pathological difference between this type and the syndrome of Guillain and Barré it is impossible to say in our complete ignorance of the pathogenesis. The present view is that they are all most likely the result of a virus infection. If so, it would seem that there may be different viruses or strains of virus having affinity for the peripheral nerves, and in that event the French are probably justified in regarding the syndrome of Guillain and Barré as a clinical entity. Several attempts to transmit a virus from these cases to animals have so far failed. There is need for further detailed pathological observations of all types of "acute infective polyneuritis." This has not yet been done, and the microscopical study of cases of peripheral neuritis has so far been much neglected. Such a study might reveal differences between the cases with dissociation of albumin and cells in the cerebrospinal fluid and those with abundant cells. Or it may be found that these variations are the result of different reactions of the host to the same virus. It may be noted that the administration of vitamin B has no effect in this group of cases and does not appear even to accelerate recovery. The observation by E. N. Rowlands and J. F. Wilkinson[2] that the values for the vitamin B content of the blood were normal in three instances of acute infective polyneuritis supports the view that deficiency in this vitamin is not an aetiological factor in these cases.

[1] *J. belge Neurol. Psychiat.*, 1938, **38**, 151, 243.

INDUSTRIAL PSYCHOLOGY

The eighteenth annual report of the National Institute of Industrial Psychology (Aldwych House, Aldwych, W.C.2) is a record of the many ways in which industrial psychologists can be of service to education, and it provides many examples of the practical value of this applied science. Serious financial difficulties were encountered during the year 1937–8, due to the rapid development of the work, much of which has to be financed from donations. Though at one time there was a danger that the work would have to be drastically curtailed, if not entirely stopped, these difficulties have been largely overcome, and the continuation of the Institute's activities is now assured. Advice on the choice of a career was given to some 1,400 young people, and a number of courses of training in the Institute's methods were held. The increasing use of intelligence tests in education is reflected in references to work carried out for education authorities in devising such tests. The studies made by the Institute on the heating, ventilation, and lighting of school buildings have developed steadily, and investigations were made for a number of authorities in different parts of the country. An inquiry into radiant electric heating yielded such interesting results that the manufacturers of the equipment asked the Institute to continue the work and to test new experimental types of apparatus. The result was that a new unit was evolved giving improved results and at the same time effecting a saving of more than 20 per cent. in current consumption. Research on vocational guidance, on the requirements of different occupations, and on the devising of new tests for special abilities was continued, and several extensive surveys of leisure occupations were carried out.

His Majesty has been graciously pleased to command that the British College of Obstetricians and Gynaecologists shall be known as the "Royal College of Obstetricians and Gynaecologists."

[2] *British Medical Journal*, 1938, **2**, 878.

SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

TRUSSES AND BELTS

BY

RALPH COYTE, M.B., B.S., F.R.C.S.

Taking first the subject of trusses, there are certain general principles which I think are of importance.

Type of Truss

The pad must be large enough to cover the opening through which the hernia protrudes, and it must be made from a material that is durable but not too hard, these qualities being most conveniently supplied by a form of cork. The spring must be of sufficient strength to keep the pad in position and prevent the hernia from protruding beneath it when any extra pressure (such as from a hard cough) is applied. To provide for the above contingency a steel spring is necessary, and, except in very special circumstances, I do not therefore prescribe any elastic or webbing truss. The spring must be covered by a material which is durable and comfortable, such as a soft kind of leather, the patient getting used to the pressure and no injury being done to the skin.

Truss for Inguinal Hernia

It is usually fairly easy to control this type of hernia by means of a truss, except when the protrusion is of considerable size. The pad of an inguinal truss fits snugly over the hernia, and when the hip is flexed the pad is forced more securely on to the exterior of the inguinal canal—a point of considerable importance, as we shall see later.

The plain pad of the inguinal truss will control any hernia that does not protrude beyond the external abdominal ring. In cases in which the inguinal hernia passes down into the scrotum or labia it is almost certain that a larger pad will be needed, and this is known as the rat-tail. The rat-tail is a prolongation downwards and inwards of the ordinary pad, ending in a thin strap which passes across the perineum up over the buttocks of the same side and fastens to a buckle fixed on the belt immediately behind the anterior superior spine. This type of pad will hold in place a hernia of considerable size, but when the protrusion passes down beneath it, it usually does so on the inner side, and the pad will then need building up on its internal aspect. This addition has led to a third type of pad which is known as a forked-tongue. The forked-tongue pad will hold in place the majority of herniae, but in some neglected cases and in old people with feeble muscles even this variety fails. To meet these circumstances several additions to the forked-tongue pad have been devised.

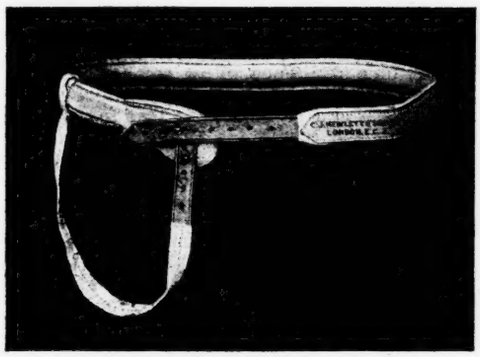
First, the pad, instead of being flat on the surface applied to the skin, is made into what is known as a prominent pad, and the surface then becomes cone-shaped, the apex of the cone fitting in the opening of the sac into the peritoneal cavity, in this way giving extra pressure with more hope of keeping the rupture in position. As a further measure, the placing of a steel spring in the pad, with its free end acting direct on to the hernia, provides still greater pressure. This addition is known as the concealed spring, and is the last hope of control by a truss except by making the actual spring of the truss more powerful. When all these efforts have failed the only other instrumental help to be got is from a bag and braces. This appliance merely consists of a large bag, shaped to the hernia when the patient is in the upright position, the weight being taken over the shoulders by a pair of braces; the bag has an opening fixed at the level of the penis for purposes of micturition. It will take time for the patient to get accustomed to any of these forms of inguinal truss, and the wearer's grumbles during the first two or three weeks should not be taken too seriously. Certain precautions, however, should be taken: the patient should be watched for points of skin pressure, which will be shown by the appearance of sores. These are most likely to occur in thin patients, and the most commonly affected parts are over the spinal column and at the level of the anterior superior spine. Pressure over the spinal column can usually be relieved by fitting two back pads made of thick felt on to the inner side of the belt—one on each side of the spine. Pressure over the anterior superior spine usually means either that the truss is not of the correct size or that the outline of the patient is abnormal; in the latter case the spring, which should be made of a malleable steel, will need to be specially shaped to the patient. These difficulties of pressure do not occur with trusses (usually proprietary) made with elastic belts, but my objection to these belts is that they do not provide enough pressure, except in the case of very small herniae, and even then the elastic so rapidly "gives" that the pressure very soon becomes inadequate.

In taking the measurement for an inguinal truss the tape-measure should fall into the hollow of the lumbar spine at the back and come round immediately below the anterior superior spine on each side, the ends meeting just above the symphysis pubis. In the case of children the truss should be rubber-covered to allow of easy cleaning, and very careful attention should be paid to the skin, with the aid of spirit and dusting powder. As there seems to be some confusion concerning the chance of cure of an inguinal hernia by wearing a truss I should like to say that it is almost non-existent after the age of 4; before that it is a very small chance, and depends on one very important point. This point, which must be rigidly observed if there is to be any possible opportunity of a cure, is that once a truss has been placed over an inguinal hernia no further protrusion of the rupture must be allowed until the truss is finally discarded, which may not be for several years. This means that if ever the truss is taken off a hand must immediately be placed over the hernia so that nothing is allowed to come down, and in addition the patient must sleep in a truss—conditions which make life very difficult. I have no hesitation in saying that a truss is not in any way a suitable method of treatment for an inguinal hernia unless there is a definite contraindication to operation. Most of us know how crippling a hernia can become in old age, sometimes making life a burden; consequently it is my practice to operate even up to quite a late age.

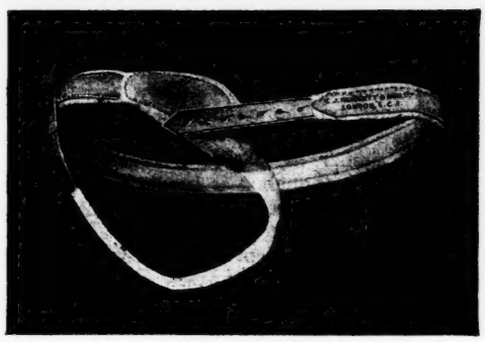
Truss for Femoral Hernia

In this type of hernia the question of easy control is not nearly so simple as with the inguinal variety, and for two reasons. First, a femoral hernia sac is frequently

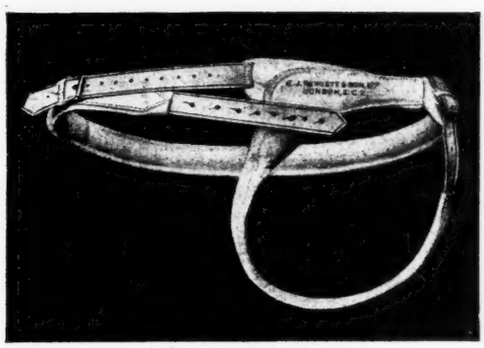
surrounded by a very definite lipoma, formed from extra-peritoneal fatty tissue, and this prevents pressure being exerted direct on to the sac and gives rise to pain. Secondly, when the thigh is flexed, as in sitting down, instead of the pad of the truss being forced more securely on to the hernia it tends, owing to its anatomical position, to be lifted off the sac and therefore allows the contents to protrude. In this case the action of flexion will be seen to be exactly the opposite to that in the inguinal case. The type of spring should be the same here as in the inguinal truss; the pad is different only in that its direction is now much more downwards than in the case of the inguinal pad. In cases where an extraperitoneal lipoma is present a slightly cupped pad can be fitted so that the irreducible fatty tissue lies in this hollow and is therefore, so far as possible, not subjected to direct pressure. This type of pad, which is known as the femoral hollow pad, prevents a considerable amount of pain, but is not altogether satisfactory.



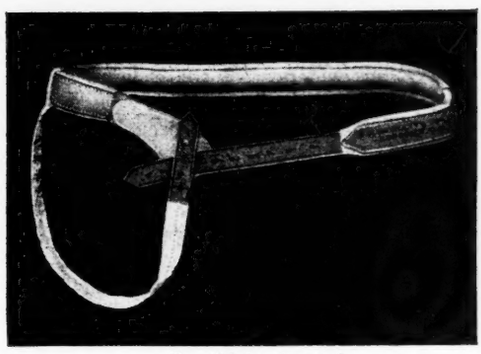
A.—Right inguinal.



B.—Right rat-tail.



C.—Left forked-tongue.



D.—Right femoral.

In some instances a femoral hernia attains a considerable size, but it usually remains quite small even in old age. When the sac is a large one the pad will have to be increased to a size necessary to cover the opening in the cribriform fascia through which the hernia is protruding into the subcutaneous tissue. In order to keep this larger pad in position a leather belt, encircling the thigh from the pad and buckling back again to it, is usually fitted; it does not, however, add to the patient's comfort. The method of measurement for a femoral truss is exactly the same as that described for the inguinal variety.

Since the femoral sac is never seen in young children the problem here is entirely an adult one. The chances of a cure by the wearing of a truss can be said to be *nil*.

It will be gathered that in my opinion a truss is not a satisfactory treatment for a femoral hernia unless there is some very definite contraindication to operation.

Truss for Umbilical Hernia

This variety is very common, and is usually congenital in origin. The type of truss used for its control is again a steel spring, which at one end is beaten out into a thin plate. The whole truss is covered with a soft leather material and is buckled round the body at the level of the hernia, the fastening being placed on the external surface of the plate covering the sac. The truss as a rule controls the hernia with ease and is comfortable to wear. The difficulty arises when the hernia is irreducible, a not uncommon complication in long-standing cases; but here the steel plate can be cut away to allow the irreducible portion of the hernia to fit in the hollow thus formed, the pad then becoming a rim covered with material and shaped to the varying size of the rupture. If, as often happens, the umbilical hernia occurs in a patient who is also obese and requires an abdominal belt for general support, then the umbilical pad can be incorporated in the abdominal belt. The measurement for an umbilical truss is made straight round the body at the level of the umbilicus.

The chances of cure by the wearing of a truss in these cases is very small, although from time to time it does happen in infants. It is a curious fact that umbilical hernia is very common in newborn infants among the black races in South Africa, and although the condition is seldom treated in any way these herniae tend to disappear in the majority of cases; yet in this country, despite being kept in place by trusses, they have a great tendency to persist.

Abdominal Belts

What are the conditions for which abdominal belts are worn? First, there is obesity; secondly, very lax abdominal walls; and, thirdly, visceroptosis.

Obesity gives rise to abdominal pain owing to the weight of the overloaded omentum, and a belt designed

for this purpose will therefore need to lift upwards to some extent but at the same time must cover the whole abdomen, otherwise the fatty tissues are liable to bulge over the edges. The belt should be made of a strong durable material, with vertical bone supports incorporated; these must be well covered, or they will tend to stick into the patient. The belt should be quite tight at its lower border and somewhat looser above, as by this means the more pendulous lower parts are lifted and are fitted into the looser upper half of the belt. The measurements required by the instrument-maker for this belt are, first, straight round the body at the level of the lower border of the xiphisternum; secondly, a similar measurement at the level of the umbilicus; thirdly, one half-way between the umbilicus and the symphysis pubis; and, lastly, measurement at the level of the symphysis. The depth of the belt is taken from the tip of the xiphisternum to the symphysis pubis; the depth at the back should be about one-half of that in the mid-line in front. Fastening is done by a series of buckles, which in my opinion are more satisfactory if placed at one or other side than if in the mid-line in front. For extra strength a strap can be brought round from the mid-line at the back on each side and buckled to a right and left flap fastened to the mid-line in front; this is usually known as a yoke.

The belt provided for the *lax abdomen* is of the same kind as that just described, but as the condition is usually a result of multiple pregnancies and not necessarily a case of obesity, the effect is not so good as in cases of obesity alone, and in many such patients a repair operation is of much greater benefit.

With regard to *visceroptosis* one point of the utmost importance is that the diagnosis must first be clearly established by *x*-ray evidence. I see a large number of cases in which patients are sent up for a visceroptosis belt and in which the diagnosis has not been established, the real condition being something quite different. In cases of visceroptosis the aim is to give support to the lower half of the abdomen in an upward direction and thus hold up the sagging viscera. The support is usually provided by a suitably covered steel plate, which fills the whole space of the anterior abdominal wall below the umbilicus and is kept in place by two springs passing round to the back and fitting on to each buttock. For the fitting of any abdominal belt, most particularly that for visceroptosis, it is of great importance that the patient should be lying down, and if possible the head should be at a lower level than the pelvis. In this way the contents of the abdomen fall back into their normal or even into over-corrected positions, and if the belt is then fixed they are thus kept up. If, on the other hand, the belt is fixed when the viscera are already sagging, then the trouble is not only not remedied but tends to be exaggerated and the pain made worse.

Nutrition and Local Government—What Your Local Authority Can Do is a threepenny pamphlet published by the Children's Minimum Council (72, Horseferry Road, London, S.W.1). The problem of securing proper nutrition for every person in the country, and especially for the children, is now very much in the foreground. It has been extensively studied by the League of Nations, and the Government is concerning itself about the subject in various ways. It is less widely realized, perhaps, than it should be that even under the existing laws a good deal can be done to alleviate malnutrition, especially among mothers and children. This pamphlet sets out clearly what each local authority can do in its own area to help to solve the problem of malnutrition.

Nova et Vetera

THE MEDICINE OF OUR ANCESTORS

Some Old MSS.

Two rather quaint old medical manuscripts were sold at Messrs. Sothebys in Bond Street on December 14. One consisted of a bound volume of treatises in various languages (English, French, Latin) and by different hands: the first and longest of the collection is a treatise on surgery, which runs to 161 pages, plus an appendix on the compounding of remedies. Chapter I is headed "Of a Phlegmon," and begins:

"A Phlegmon or inflammation is a very sensible swelling of some part with a redness, heat and pain of ye same, and often is accompanyd with a feaver, all which is caused by an extravasation of the bloud. The causes are a thick and sometimes a rarefyd violent mould and fermentative blood which meeting with some resistance in ye smaller vessels or being more thickened or rarefyd in some places than others it stops in ye bloud vessels and so hinders yt that follows to circulate which distending the membrans of ye arteries or veins at last burst 'em and overflows betwixt ye fibres or membrans of some fleshy part which it distends and elevates and is called a phlegmon. A phlegmon is produced also by any external or internal pungent irritation inasmuch as it produces a violent influx of ye spirits which contracting ye fibres of ye part chokes up ye passage of ye bloud, or it may cause a phlegmon by rarefying ye bloud more than ordinary, as smoke for example causes an inflammation of the eye. A coagulated lymphe of the arteries and veins may cause a phleg: or any external cause pressing on ye extremety. . . . As for the cure, let ye patient be blouded as soon as can be by which the growth of ye swelling will be hinderd and the fever deminish'd."

The author further advises free purgation, though he adds that some authorities are very much against it. It seems a legitimate deduction that the writer knew and freely accepted Harvey's teachings on the circulation; so the date of the manuscript is probably of the seventeenth century. The handwriting is very similar to that of a later MS. in the series which is dated 1682, though it is hardly possible to say they are certainly by the same hand. Following a treatise in French on poetry, one comes to what would appear to be a copy of a letter to a patient about some affection of the breast—perhaps a malignant growth.

"The oppresion of your breast and extenuation of your body seems to proceed from the acrimony or sharpness of your blood which passing through the loungs that are of a very delicate contexture corrodes or irritates the parts thereoff: wherefore the chief thing one shoud aime at in the currection is to sweeten the bloud and give it a natural consistence and more proper to nurish the body. For these ends I think fit she shoud make use of the insuing remedys. First 't will not be amiss to let out a small quantity of bloud, both because the remedys so will have more roome to operate their effects as also to hinder any vain or bloud vessel may be in danger to be opened in the lungs or in any other place. Secondly to evacuate in some manner ye acrimonious humours in the bloud 't will be fitting to take some very mild and gentle purge, for examble a little mann in broth or with a pectoral decoction as follows. . . . A day after this she may make use of these pectoral pills for ten days" [liquorice, hyssop, prune, prescribed for pills]. "After this I think 't woud be fit she shoud purge herself as she did before and a day after use ye following broth composed of crayfish of the river which are very much in use in all maladys coming from ye sharpness of the bloud."

The MS. goes on to advise a milk diet for a month and a half, with oatmeal, etc.

"Charmes" Against Sickness

The other old medical manuscript is of date approximately 1475 and consists of fourteen leaves of medical and domestic recipes in English, with a list of "charmes" to ward off sickness, some of them in Latin. The handwriting

is much like black letter printing, and is beautifully done. A transcript was sold with the original, prefixed to which is a charm, also of 1475, for a lying-in woman. "For woman that travelyth of chylde bynd thys wryt to her Thye," followed by a Latin prayer or adjuration to St. Elizabeth and other personages. Another is "ffor to staunche the flux take hoot mylke as yt comyth fro the cowe and put in a weasalle and tak as moche ? of myntes and put in a nother vessell and tha put a pype in ? be yt self and drink up at onys both lycours wt the pypes. Use this iii tymys, and he shall be hoole." Next is "ffor wormis in a manys wombe take iii days fasting a drawth of swet mylke as yt comyth fro the cowe and at the iiii daye yeve hym to drynk garlyk and stamp yt wt wynegre lewke warme. Also drynk coole seed or ache seed. . . ." Others of the headings are "A good Charme to staunche blood," "A Charme of Sent Susana," "A Charme for wyked wyts."

SECTIONS OF A MUMMY

The Histology of Har-Mosĕ

About the end of the fifteenth century before Christ there died in Thebes a great architect, Sen-Mūt, who had carried out much of the magnificent buildings for the warrior queen, Hatshepsūt, and in particular the famous temple at Deir el Bahri in the Valley of the Tombs of the Kings. While Sen-Mūt's rock tomb was being dug and while his body was undergoing the first and most costly method of embalming, it happened that a poor old singer named Har-Mosĕ died; he bore some relationship to the great architect, but whether he was in his service or that of a relative is not known. There was no family tomb to receive him, and so after a simple embalming his coffin was placed in a gully near his patron's tomb, his lute was laid by his side, and his entrails, which had been soaked in salt, were wrapped in linen and placed in an ordinary household box, roughly converted to a Canopic chest. In 1935 Mr. Lansing and Mr. Hayes came upon this mummy when excavating at Sheikh Abd el Kurnah, and they sent it to the professor of anatomy at Cairo, Dr. Derry, who found the skeleton in poor condition. But the entrails appeared unusually well preserved, and were dispatched to Professor A. F. Bernard Shaw, who has recently given an account of his observations.[1] The founder of palaeopathology, Sir Armand Ruffer,[2] has given numerous accounts of pathological lesions found in mummies, but the histological methods which he employed were limited, and he had considerable difficulty in cutting sections until the material had been softened in sodium carbonate. In the case of Har-Mosĕ Professor Shaw had no difficulty in cutting sections embedded in paraffin in the ordinary way, and applied the full armament of modern microtomy. His results are truly remarkable. All the organs could be readily recognized and their pathology studied. It is true that all nuclear material had disappeared and much of the cytoplasm, yet the acellular stroma—the collagen, elastica, and in particular the reticulin network—showed no detectable change, and it was this that enabled an accurate study to be made. Professor Shaw concludes that Har-Mosĕ was a fat man who suffered from emphysema and probably died from a severe bronchopneumonia with pleurisy. It would appear that the air of ancient Egypt was not so pure and balmy as we have been led to believe, for there was much anthracosis in the old singer's lungs. The most striking feature is the perfect preservation of the minute reticulin fibrils; their mode of formation and chemical nature are still in doubt. They cannot be demonstrated with ordinary aniline dyes, but must be impregnated with silver to render them visible—and this was possible after over three thousand years.

[1] *J. Path. Bact.*, 1938, **47**, 115.

[2] *Studies in the Palaeopathology of Egypt*, University of Chicago Press, 1921.

MEDICINE AND THE LAW

LORD DAWSON'S SPEECH

The annual dinner of the Medico-Legal Society was held at the Connaught Rooms, London, on December 16, with Mr. JUSTICE HUMPHREYS, president of the society, in the chair. The company was representative in about equal parts of law and medicine, and the usual toast of the two professions was given in a witty speech by Sir ROBERT H. PICKARD, Vice-Chancellor of the University of London. He suggested certain analogies and contrasts between the two professions, as, for example, that the wise man went to medicine quickly and to law slowly.

The Shackles of Law upon Medicine

Viscount DAWSON OF PENN, in responding for "Medicine," said that the law had been built up, like a happy synthesis, by a succession of individual judges, and thus, in the curious English way, from time to time there crystallized out rules and principles which acted as guiding posts for years to come. The law in this country was dynamic, it was sensitive to prevailing standards of conduct and progress of knowledge. "A striking example of that, as I see it, is afforded by a study of the pronouncements on the law relating to abortion extending over the last seventy years. They have gone on step by step, always a little behind, as is proper for the law, because medicine in its advance, I must admit, has a frayed edge, and the law cannot afford to have a frayed edge, it must have a sharp outline. But we have lately had a pronouncement which I venture to think is epoch-making [Lord Dawson was evidently referring to the summing-up of Mr. Justice Macnaghten in the trial of Mr. Aleck W. Bourne at the Central Criminal Court], amongst other reasons for this, that it is the first time that health has been correlated in relation to quality of life as distinct from quantity. . . . This judgment has brought to the fore that health means quality of life."

The law had the defects of its qualities, Lord Dawson continued, and it was sometimes found that judgments pronounced in other days and under other conditions resulted in some retardation of progress. It should also be said, however, that the law had always paid regard to the interest of the community, and not only to retribution and reformation of offenders, while medicine, until relatively recent times, had been held to concern itself with the individual patient and his immediate sickness. To-day medicine took and was expected to take the wider view of prevention and deterrence of disease in this and the next generation, but here it might find itself in conflict with the laws concerned with maiming, unlawful wounding, and bodily harm. In the case of persons of mature age who wished to marry, one of them being unfortunately liable to transmit disease, why should not he or she, on request, be allowed to be sterilized? He instanced the case of a woman who was a carrier of haemophilia. Another example was the carrier of typhoid, with the typhoid germ, there was reason to think, residing in the gall-bladder. Yet the removal of the gall-bladder might be regarded as unlawful wounding.

"Such shackles, never intended to apply to us, should be removed so that medicine may be set free to extend its ever-widening work of preventing disease. It would be an appropriate task for this society to set up a committee to consider how, with reasonable precautions, we may bring these laggard little bits of law up to date, and make them, as most of the Common Law already is, in tune with the advance of knowledge and the public conscience."

Lord Dawson also referred to the Criminal Justice Bill. There were a number of offences, he said, which had "one foot in pathology and one foot in crime." These cases required treatment as well as punishment. The proposals embodied a considerable extension of the range of probation which enabled treatment to be carried out

under the guise of punishment. He hoped there would be, in this field as in others, a great advance, but if mistakes were to be reduced to a minimum and success made more real there must be co-operation between the medical and legal professions.

The Unchanging Common Law

Mr. JUSTICE MACNAGHTEN, who responded for "Law," said that in view of Lord Dawson's remarks about the Common Law, he felt called upon to make some answer. Mr. Justice Humphreys and he were but servants of the Common Law, and he thought they both would resent any suggestion that the Common Law changed with the changes of popular emotion. On the contrary, the Common Law, founded on the common sense of the people of this country, was unchangeable and unchanged save in so far as Parliament, in its wisdom, or otherwise, saw fit to alter it. It fell to his lot this year to expound the law relating to the procurement of miscarriage, and he did no more than state to the jury what Mr. Justice Humphreys, as president of that society, had explained on a previous occasion.

"So far from it being true that there has been any change in the law," Mr. Justice Macnaghten continued, "the law of England on that subject has always been the same. Much of the criminal law is founded on the very simple Ten Commandments, or such of them as are applicable, and one of them is 'Thou shalt not kill.' The law that said 'Thou shalt not kill' applied also to the unborn child as it did to the living human being; but if the choice came between the life of the unborn child and the life of the mother, the Common Law of England said that the life of the mother was to be preferred to the life of the unborn child. In that, I understand, it differed as in other respects from the Canon Law. I am told that by the Canon Law the life of the unborn child was to be preferred to the life of the woman, but the Common Law of England preferred the life of the mother.

"In those days, long before Parliament ever existed (because the Common Law is much older than Parliament), medical science had not advanced so far as it has now, and it was supposed that the child was not alive until it gave some manifestation of its existence. The result was that in a prosecution for killing an unborn child the prosecution had to prove that the child was alive, and obviously there was great difficulty about that. The woman herself, no doubt, would not be a very willing witness. Parliament, in its clumsy way, at the beginning of the reign of George III, passed a law to make it a crime to procure miscarriage, even if the woman was not pregnant at all, and so it came about that there was a popular superstition that in all circumstances the procuring of miscarriage must be illegal. But the Common Law remained the same. It was always lawful to kill the unborn child if it was necessary to do so for the preservation of the life of the mother. And by preserving the life of the mother it did not mean preserving her as a lunatic or as an absolute physical wreck, preserving what was not really to be called a life at all. That, under the guidance of your president and my teacher, was the law which it fell to me to expound to the jury, and so it is thought by some who do not know—amongst whom I must not include Lord Dawson of Penn—that the Common Law of England has changed. On the contrary, the Common Law of England, founded on the common sense of the people of England, has always been the same, and if you trust to it you will be safe."

Mr. ST. JOHN G. MICKLETHWAIT, chairman of the Middlesex Sessions, proposed the health of the society, to which the PRESIDENT responded, remarking that the society was in a flourishing condition with 400 members. He referred in detail to its programme of meetings and its honorary officers. The toast of "The Guests" was proposed by Judge LEIGH, president of the Manchester and District Medico-Legal Society, and brief responses were made by Professor W. H. ROBERTS, president of the Society of Public Analysts, and Miss ELIZABETH BOLTON, president of the Medical Women's Federation.

MEDICAL USES OF RADIUM

THE M.R.C. REPORT

The sixteenth annual report on the Medical Uses of Radium, issued by the Medical Research Council,[1] must not be confused with its report on Radium Beam Therapy, which has already been reviewed in this *Journal* (December 10, p. 1209). The report now under consideration deals with the work carried out at the various centres which hold radium on loan from the Council, and, like its predecessors, consists of an experimental and a clinical section. Year by year the space allowed to experimental work has gradually increased, and this year the two sections are of approximately equal length.

A glance at the experimental section will show the wide field of research which is being covered. In the domain of pure physics Professor Paneth deals with the production of neutrons—that is, particles of unit atomic weight 1, but carrying no electrical charge—which promise to be of no inconsiderable practical importance in the near future—and other aspects of the same subject are considered by Mr. Saxton and Mr. Michiels. Professor Hopwood is investigating the physico-chemical effects of neutrons and gamma rays; he has already established the facts that (*a*) the effects due to neutrons are of the same nature but relatively far more powerful than those due to gamma rays; (*b*) negatively charged colloidal particles become more stable, and positively charged colloids become less stable, when irradiated with either neutrons or gamma rays; (*c*) over a wide range of exposures the breakdown of dilute aqueous solutions of hydrogen peroxide and the oxidation of dilute solutions of potassium meta-bisulphite were directly proportional to the number of neutrons captured or of gamma-ray energy absorbed. The whole series of experiments supports the view that the primary action of the radiations is on the water, and if this view is correct the role played by water in the animal body must be significant and possibly predominant.

Dr. Mayneford reports further progress in the work of standardizing gamma-ray dosage in terms of *r* units. This is, of course, of the first importance in estimating the all-important question of dosage in radium treatment.

Research on Gamma Radiation

Dr. J. C. Mottram reports some results on the combined action of gamma radiation and the carcinogenic hydrocarbon 3:4-benzpyrene. Four batches of twenty mice each were painted with the benzpyrene once a week over seventy-five days: one batch served as control, the remaining three received doses of 1,440 *r*, 480 *r*, and 160 *r* respectively about the sixteenth day. In the control batch five warts developed; in the 160 *r* batch, six warts; in the 480 *r* group, thirteen warts; and in the 1,440 *r* batch, fifteen warts. It had been reported by Cramer that doses of 4,400 *r* and 8,800 *r* applied to mice similarly painted delayed or inhibited neoplastic formation. The general conclusion reached is that while larger doses of gamma radiation inhibit the further development of precancerous lesions, insufficient dosage to the whole or part of the lesion may increase the tendency to malignant change.

Dr. Joan Ross had already shown that a weak gamma-ray source acting for a long enough time is carcinogenic for the rabbit. The source employed was 0.5 mg. screened by 0.55 mm. platinum, and the tumours appeared at an *average* of 125.5 weeks after its insertion; as the first tumour had already attained a large size at 97.5 weeks, ninety weeks was considered to be the earliest time of expectation for tumour production. Subsequent experiments have been conducted with the same radium needles, but a modification has been introduced by the

[1] *Medical Uses of Radium.* Summary of reports from research centres for 1937. Medical Research Council. Special Report Series, No. 232. H.M. Stationery Office. 1s., postage extra.

injection of Shope's papilloma virus and infectious fibroma virus into two different series of rabbits, in order to see if the time necessary for the development of the tumours could thereby be reduced. It is too early to draw conclusions, but one rabbit in each series developed a tumour from sixty to seventy weeks after radium implantation. These experiments are being followed by further series.

Professor Russ and Miss G. M. Scott again report upon some biological effects of prolonged exposure to gamma radiation. Young male and female rats were exposed to forty-seven times the "toleration dose" on 121 days, with two free days each week.* After this exposure both males and females were rather lighter in weight and had a much higher death rate than the controls. This lag behind normal weight was never made up; when the rats were 1 year old the controls were fine healthy animals, but the irradiated rats mostly died young, and the survivors were thin and prematurely aged. The females when mated to normal males became pregnant, but in only one case did the young survive birth for any length of time. The rest died at birth, were born dead, or abortion occurred. Male irradiated rats mated to normal females were sterile for several months. Four months after the end of irradiation two surviving members produced apparently healthy offspring by their control mates. Further important contributions to the experimental work are made by Dr. J. G. Spear and Dr. C. B. Allsopp of Cambridge, as well as by Dr. M. A. C. Cowell of Manchester.

Clinical Work at the Centres

In the clinical section there are no striking new developments to record, but the usual standard of excellence is maintained at the Council's various centres. At the Birmingham General Hospital special attention has been paid during the past year to radium dosage in cancer of the breast, and Sievert chambers have been introduced as part of the routine clinical practice. At the Marie Curie Hospital cancer of the corpus uteri has hitherto always been treated when possible by operation, and radiotherapy reserved for those cases in which it was contraindicated on general grounds or when the patients refused operation. These cases treated by radiotherapy alone have, however, proved of considerable interest, and the results suggest that this may after all be the best treatment in all cases of cancer of the corpus, except when it is complicated by the presence of myomata or ovarian tumours, and possibly when pelvic inflammatory disease is present. The five-year survival rate is found to be approximately the same for radiotherapy as for surgery, while the distress to the patient is much less and the mortality should be *nil*. Cancer of the oesophagus is treated at the Middlesex Hospital by using radon mounted on Souttar's tubes, a dose of 3,000 *r* being given to the mucosa over five days, during which time the patient is fed by a stomach tube passed through the nose and the Souttar's tube. This procedure has been found to improve the general health, to avoid the necessity for a gastrostomy, and to relieve dysphagia during subsequent *x*-ray therapy, which is still considered to be the best treatment at the hospital's disposal.

Radiotherapy for Metrorrhagia: A Warning

The Marie Curie Hospital issues a timely warning respecting the radiological treatment of metrorrhagia in young women. It is a matter which has several times been referred to in this *Journal*, and we are glad to find it attracting attention at this very important centre. The passage in question is well worthy of quotation:

"Researches on the hereditary abnormalities following experimental irradiation of some animals may have a bearing on the radiological treatment of haemorrhage in young women. If it can be shown that a small radiation dosage, such as is given in these cases, may cause gene mutations which are irreversible and may be inherited, these results will have to be considered in relation to the treatment of haemorrhage in younger women. As there has been only one generation since radiation began to be extensively used in these cases it is doubtful if sufficient data for an investigation of the effects on human heredity are yet obtainable. It is important that all women of child-bearing age receiving radiation treatment should be kept under observation and their descendants followed up."

The comparative brevity of the clinical section is to be taken as an indication that procedures are gradually becoming standardized, so that there is now no need for the repetition of detailed descriptions, and a considerable part of this section is occupied by tabular summaries of the results obtained over several years.

* The International Committee of Protection recommends that no one working seven hours a day should be exposed to a greater continuous intensity of radiation than 10^{-3} *r* per second, which is three times the toleration dose.

AIR RAID PANIC

DISCUSSION BY BRITISH PSYCHOLOGICAL SOCIETY

A discussion on "Panic and Air Raid Precautions" took place at a meeting of the Medical Section of the British Psychological Society on December 14, Dr. E. A. BENNETT presiding.

Dr. JOHN RICKMAN, physician of the London Clinic of Psycho-Analysis, said that air raids must be regarded as an attack on the nerves of the civil population. The method might be new but the problem was familiar. Not everyone in such an attack showed signs of panic, and the resistance of the individual differed at different times. Panic might be defined as a condition in which the highest degree of dread was experienced, social ties being temporarily severed and self-control abandoned. External danger obviously played a part, but there were other factors, and indeed external danger mobilized the aggressive impulse. He described two stages of panic. The first was characterized by a feeling that self-control could not be maintained much longer, but it passed off if danger lessened or moral reinforcements arrived, otherwise it might develop into acute panic with loss of control of mind and body. It was during this stage that individuals "broke formation" and ran from their friends, but the capacity of response to leadership need not be lost. A calmer stage might follow, with return of self-control and loss of restlessness, but response to command would still be feeble and the sense of belonging to a group would be imperfect. In a further stage the panic might resolve itself, so that there was resumption of social contacts and return of self-respect. The most important factor in preventing panic was the building up of self-confidence, identification with a strong parental figure, firm and decisive leadership. Dr. Rickman concluded that there was not one cause of panic but a multitude of aetiological factors, not one stage but at least three, and that the endeavour to foresee and prevent what might prove to be the greatest menace of modern war was no reflexion upon the quality of British people; to gloss it over would be a failure of medical duty.

Psychological Defences

Dr. E. B. STRAUSS, physician at the Institute of Medical Psychology, said that air raids were aimed at the destruction of civilian morale. It was war waged against the mind, as, in the last resort, all wars were. It had become a cliché that spiritual disarmament must accompany or precede material disarmament; it was not as generally recognized that the converse was true—that psychological as well as material defence must be looked to. Psychiatric casualties in air raids would tend to fall into two main groups. Some people would run riot and others be rendered immobile by shock, and each group would require

to be differently handled in the interests of the individual and to prevent spread. It was impossible to estimate the proportion which such casualties would bear to physical ones in a future war, but the Spanish experience seemed to show that the population became accustomed to air raids and the number of acute psychiatric casualties became progressively less at time went on. Prophylaxis seemed likely to depend on one principle—namely, inculcation of group loyalty and sense of common aim. With the passing of the "old school tie" spirit psychological defences were impoverished, and the decline of the belief in revealed religion had left another gap. Group psychologists in certain countries had discovered that the quickest method of uniting a nation was by the inculcation of a common hate; a common love did not seem to have the same dynamic result, and yet this was likely to be a much more reliable spiritual defence in the last analysis. One important thing was that every citizen should have his particular duty allotted to him beforehand. A knowledge of what to do and where to go to do it was the best preventive of panic and neurosis.

Spanish Experience

MR. JOHN LANGDON-DAVIES described recent observations in Spanish bombarded towns, where, after more than two years of air war, the morale of the Government supporters was unimpaired. One of the most important reasons for this was the sense of solidarity between the Government and the governed. There was no suspicion that the Government had kept the people in the dark. He pleaded for a similar frankness here. The people must be made to understand that London in air war would be the front line. A.R.P. should consist, not in fantastic instructions about gas-proof rooms, but in evacuating the people who were not suitable for front-line experience. No air raid was likely to direct attention to what were called military objectives. The only objective of air bombardment was the nerve centres of the population. It was necessary to prepare the people for a possible experience of successive bombardments at unpredictable intervals. As a relatively minor matter he complained of the wailing note of the sirens which were to give the air raid warning. The sound was a frightening one, whereas it should be a call to action. People who had a definite job to do in a raid were in a much better psychological condition than those who had not. The paralysing effect of noise in itself had also to be considered. To the nervous person the psychological damage, owing to the noise, would be equally great even though every bomb were blank. The wireless might be largely employed in calming the fears of the population due to the noise of the anti-aircraft guns.

Reactions in Different Types

DR. DENIS CARROLL doubted whether the stages in panic were as clear-cut as Dr. Rickman had suggested. The earlier stages might represent only fear and anxiety. It was not proper to speak of panic until control had been lost in some degree. The actual factors concerned were both objective and subjective, of which the latter were the more important. The objective factor might be no more than a trigger mechanism. With a normal person presumably a much greater objective stimulus would be required. Psychotics did not panic as much as hysterics, and during the last war it was shown, both on active service and at home, that the psychoses were not increased in the same proportion as the neuroses. He agreed with what had been said about strengthening the ego by providing an ego-ideal. It was important to find an outlet for the aggressiveness which was stimulated as the result of air attack. This was most properly channelled in active or auxiliary services, but if it were not given some outlet it was liable to express itself against others in the crowd. Among certain practical suggestions he welcomed the idea of the large provision of underground shelters, but said that it was important to equip them with sufficient inlets and outlets and ventilating shafts, not only for ordinary purposes but to prevent the claustrophobic reaction.

In the course of some general discussion DR. MARGARET LOWENFELD referred to the need for recharging the morale between bombardments, and to what teachers and others could do in this respect in persuading people to undertake some creative employment instead of merely listening to others. DR. BERNARD HART expressed himself sceptical as to whether there were fundamental differences between the Spanish and English temperament in regard to blood and death which one speaker had suggested. Dr. Ross thought that the evacuation of women and children might be desirable from the point of view of the morale of the men, who would be less likely to suffer from the anxiety state if their dependants were not imperilled. He also mentioned that the reaction of many people to air raid bombardment would be not panic but the not unrelated condition of elation. Another speaker referred to the importance of adequate medical services from the psychological as well as from other points of view. A breakdown of medical services would be a primary factor in precipitating panic; their efficiency and adequacy would be a primary safeguard.

FAR EASTERN TROPICAL MEDICINE CONGRESS

The tenth congress of the Far Eastern Association of Tropical Medicine was held from November 25 to December 10. The meetings took place in the Medical School of the Hanoi University, a school which has a course and gives a diploma to its students, enabling them to practise without further examination in France. It is thus comparable in standard to the medical schools in Singapore and at Batavia. Many of the students go home to specialize and take degrees at French universities. The Governor-General, His Excellency M. Jules Brevié, opened the first meeting of the congress in the grand amphitheatre of the University. The president was Dr. Le Roy des Barres, professor of radiology at Hanoi, who is also known as an eminent public health officer. The British vice-presidents included Dr. Selwyn Clarke, Hong Kong; Dr. A. L. Hoops, C.B.E., Singapore; Dr. R. D. Fitzgerald, Malay States; and there were vice-presidents from India, Burma, and Australia, and Dr. Park from the League of Nations. Dr. H. C. Smith represented the United States, and Dr. Larsen, Honolulu. There were large delegations from most countries in the Far East, including China and Japan, the Dutch East Indies, the Germans in China, and small delegations from India, Burma, and Australia. The German delegation included one surgeon from Shanghai.

Hanoi, the capital of French Indo-China, is a town nearly as large as Singapore but not so up-to-date. French Indo-China is an extensive territory comprising two French colonies, in and around Hanoi and Saigon, and a number of native States with governors or residents serving under their native rulers. It may be compared in constitution to the Straits Settlements and Malay States, and to the colonies and native States in the Netherlands East Indies. Like them the natives are now being given a responsible share in the Government. The country is some 2,000 miles long and about 500 miles wide in its widest part. It borders on Siam, Burma, and the South China province of Yünnan and is not far from Hong Kong.

Dr. Hoops has been asked to visit Yünnan-fu, the capital of Yünnan, about 400 miles from Hanoi, to report on the casualties inflicted on non-combatants recently by Japanese aeroplanes operating from the region of Canton; also to inspect the medical arm of the Chinese force at Yünnan-fu and report on deficiencies of medical stores and equipment. Dr. Hoops will return to Singapore, travelling through Burma, and looks forward to sending adequate medical supplies from the Chinese War Relief Committee of Singapore.

LONDON JEWISH MEDICAL SOCIETY

Appeal for Refugee Doctors

The eleventh annual dinner of the London Jewish Hospital Medical Society was held at the Trocadero on December 18. Professor Henry Cohen, who was in the chair, in proposing the health of the guest of honour, Dr. Robert Hutchison, P.R.C.P., said that the Society met that evening with their hearts heavy on account of the position of people of their race in Central Europe. The spurning in Europe of freedom of thought and of conscience was a challenge which they as Jews must meet. Professor Cohen then paid a glowing tribute to the personal and professional qualities of Dr. Hutchison, whose medical career, he pointed out, had coincided with the great modern discoveries in medicine.

In response Dr. Hutchison said that he was particularly glad to be honoured by a Society in which he had so many old friends and whose members belonged to a race to which the science of medicine owed so much. In proportion to its numbers no race had contributed so freely to medicine, especially during the past fifty years. The Jews and the Scots, he considered, had many qualities in common, such as devotion to education, awareness of the value of hard work, and a capacity for getting on; "We fear God, and push," he said. With urbane wit and humanity Dr. Hutchison pursued his analogy and suggested that both Jews and Scots were really strangers in England and should always remember that they were the guests of a kindly and tolerant people.

The toast of "The London Jewish Hospital Medical Society and its President" was proposed in a brief and sincere speech by Mr. R. Scott Stevenson. After words of praise for the President of the Society, Professor Cohen, and for Mr. Arnold Sorsby, he said that in his opinion too great limitations should not be placed upon the number of Jewish doctors to be admitted into this country from Central Europe. Replying on behalf of the Society, Mr. Arnold Sorsby said that the present persecution of the Jews was not a specifically Jewish problem, but had its wider aspect—it was essentially an attack upon the dignity of human life.

Later on in the evening Professor Samson Wright, after giving details of the plight of Jewish refugees and of the tragedy of the Jewish population in Germany at the present time, said that the Jewish population in this country had a special obligation and duty to perform. It was only right that the rest of the community should expect the Jews to do everything they could to help it to look after members of their own race. There were, he reckoned, about a thousand Jewish doctors and dentists in this country, and if they would each sign a covenant to subscribe £5 a year for seven years they would be able to guarantee the sum of £50,000, taking into account the Government refund of income tax. An anonymous donor had already given £750, and he hoped that others, too, would be able to contribute sums in excess of the minimum specified. He felt it must be their responsibility that food and lodging should be provided for those Jewish doctors recently allowed to enter the country, with permission eventually to practise medicine after studying here. He was confident that every Jewish doctor and dentist in the country would readily respond to this appeal. In connexion with the committee which had recently conferred with the Home Office on this question he would like to thank Dr. Robert Hutchison for his sympathy and interest, and also Dr. G. C. Anderson, Secretary of the British Medical Association.

The Hearing Aid Manufacturers Association has been formed with headquarters at 30A, George Street, Hanover Square, London, W.1. The founder members are Allen and Hanburys Ltd., Amplivox Ltd., John Bell and Croyden Ltd., Peto Scott Electrical Instruments Ltd., Radio-Aid, Ltd., and Aural Appliances Ltd. (Sonotone). One of the chief aims of the new association will be co-operative effort to educate and advise the deaf to buy hearing aids from reliable manufacturers only, working in closest contact with the medical profession.

Reports of Societies

INVESTIGATION OF MALIGNANT DISEASE

At a meeting of the Medical Society of London on December 12, with Dr. C. E. LAKIN in the chair, a discussion took place on the investigation of cases of malignant disease of the breast and urinary bladder.

Carcinoma of the Breast

Mr. ERIC PEARCE GOULD said that from the point of view of treatment the preliminary investigation of breast cases was to-day a matter of greatest importance. Treatment was no longer wrapped up in the single question: Can surgery remove all the apparent disease? *X* rays and radium, either or both plus surgery, were now alternative lines of treatment. Radical operation for carcinoma of the breast was only the proper procedure if in a particular case the operation could be truly radical—that is, include a wide margin of apparently healthy tissue in every direction; and surgery of this kind, when there were possible alternatives, was only justifiable if the risk of the operation to life was negligible. The truly radical operation was out of the question if the growth, however small, was at the extreme inner or upper limit of the breast. If gland tissue was minimal, as in the case of the male, radical operation was impossible. The extent of skin involvement would determine the total area of skin that must be sacrificed, and if this were excessive it might itself deter some surgeons. The distressing features attending ulceration of the growth had made operative removal as a palliative measure recommended, but to-day radiotherapy should be given a chance before this was undertaken.

The points to be observed with regard to glandular involvement were not only the site of the glands but their number, size, and fixity. If an enlarged gland was found in the opposite axilla it was always worth while removing it for histological examination before concluding that carcinoma had spread so far. With regard to the heart, he had long held that any woman capable of leading an ordinary life was fit for mastectomy whatever the size, sound, or rhythm of the heart might be. The same was true of patients who were chronic asthmatics and/or emphysematous, but raised blood pressure was a contra-indication. Diabetes to-day involved no particular operative risk if sufficient time were allowed beforehand for stabilization. No woman welcomed the mutilation of mastectomy, but most of them accepted it when advised by a practitioner they knew and a surgeon they trusted; in private practice he met from time to time a patient who was genuinely terrified of the operation or hopelessly neurotic, and he offered her in the first instance an alternative treatment.

Tumours of the Bladder

Dr. J. SWIFT JOLY said that from two-thirds to three-fourths of primary tumours of the bladder were papillary, and varied greatly in their degree of malignancy. At one end of the scale was the benign papilloma. The next type was the malignant papilloma—a contradiction in terms and yet a convenient expression, for the tumour was essentially papillary, and usually could not be distinguished by the naked eye from a benign papilloma, but in certain portions the villi might be noticed as shorter and thicker than elsewhere, due to alteration in the epithelium. Those who held that proliferation was the first sign of malignancy would have no hesitation in excising, while those who considered that infiltration was the true criterion were forced to look upon them as pre-malignant growths. Owing to the absence of malignant infiltration they were amenable to cystoscopic diathermy.

Every patient suffering from an intermittent haematuria should be cystoscoped as soon as possible. If the early

symptoms resembled those of cystitis it was usual to find that the patient was not sent up for examination until a long treatment with urinary antiseptics had proved unsuccessful and valuable time had been lost. The position of the tumour was important and materially influenced the choice of operative treatment. Most of these growths arose from the posterior lateral wall, a considerable number from the lateral wall well above the ureteric orifice. For resection of the growth to be possible there must always be a healthy area at least half an inch wide between the growth and the internal meatus. If the tumour was so placed that resection with a sufficient margin of healthy tissue would involve both ureteric orifices a partial cystectomy should not be attempted. Involvement of one ureteric orifice was not a contraindication to a partial cystectomy, nor did it add much to the difficulty of the operation, though it increased the risk because it opened the door to an ascending infection.

Descending pyelography gave a great deal of information as to the conditions in the upper urinary tract and the state of the bladder. Failure to secrete uroselectan or a similar dye must not be taken as an indication that the kidney was permanently functionless. As for the results of operation, radium implantation had proved most disappointing; he had not had one successful case. Partial cystectomy was suitable for cases in which there was a circumscribed carcinoma which did not encroach on the internal meatus or both ureteric orifices. With total cystectomy the great difficulty was the disposal of the ureters; until some safe procedure was devised in this respect the operation could never become popular.

General Discussion

Professor G. GREY TURNER stressed the need for general clinical examination in all cases of malignant disease. He had been impressed by the writings of Halsted, who was accustomed to spend an hour in the ordinary examination of a case of malignant disease of the breast. During recent years he had been interested in the great frequency with which there were secondary deposits in bones in patients who looked and felt well. He had been a little surprised to hear Mr. Gould say that the patient with high blood pressure was a bad patient for surgery. In his experience such patients seemed to get over the operation fairly well. It was a mistake to operate during the immediate premenstrual period, when haemorrhage was sometimes alarming. On types of patients in general, he was never afraid of the small shrivelled-up elderly woman, but he was rather afraid of the florid woman with a tendency to stoutness.

Mr. ZACHARY COPE mentioned cases in which carcinoma of the rectum had followed a year or two after the breast had been removed for carcinoma. A routine *x*-ray examination should be made in every patient whose breast was to be removed. Some patients had early deposits in the lungs which *x* rays would reveal. He agreed that deposits in bone might not be seen, though they might be suspected; examination of the blood would give some information as to early secondary deposits in the bones.

Mr. L. E. C. NORBURY also commented upon the simultaneous appearance of carcinoma in the breast and in the rectum. He mentioned a case of simultaneous carcinoma of both breasts, which were removed within three weeks of one another, followed by treatment with deep *x* rays; the patient was still alive ten years afterwards. Sir JAMES WALTON said that he was one of those people who believed that most of the younger surgeons of to-day would see the time when no case of carcinoma of the breast was operated on at all. They would all be treated by deep *x* rays, or some agent of that kind. Mr. E. W. RICHES considered that in carcinoma of the bladder more use should be made as a diagnostic measure of trial cystodiathermy. In cases in which it was doubtful whether a malignant growth or a papilloma was concerned a prolonged cystodiathermy would solve the problem. It was surprising how many of them responded, showing that they were of the type that was at any rate not infiltrating. The so-called ordinary examination could be rather overdone, especially in cases of haematuria. The essential examination was by the cystoscope.

Dr. C. E. LAKIN, from the chair, said that surely a patient having Bright's disease with haematuria should not be subjected to cystoscopy. He would have said that cystoscopy was a special examination to be made after a general examination had failed to elicit the cause. So many of these cases were now going straight to specialists for special examinations, and many people were being subjected to the most disagreeable forms of examination which in the long run were unnecessary. Mr. RICHES retorted that the surgeon also saw cases which had been treated as Bright's disease but were in fact cases of carcinoma of the bladder. He stressed examination with the cystoscope not more for the value of its positive than for the value of its negative findings. Properly carried out, cystoscopy was no more disagreeable than a barium enema.

ADDISON'S DISEASE: RECENT DEVELOPMENTS IN TREATMENT

At the meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine on December 13, with Dr. E. C. WARNER in the chair, recent developments in the treatment of Addison's disease were discussed.

Dr. S. LEVY SIMPSON said that the first real advance was the preparation in 1930 by Swingle and Pfiffner of a potent extract of the adrenal cortex. For a severe case of Addison's disease from 5 to 20 c.cm. was given daily intramuscularly. The next advance was made in 1935 by Loeb and his co-workers, who showed the value of sodium chloride and other sodium salts, given by mouth, in doses of 12 grammes daily, in permitting a reduction of the dose of cortical extract. Some relatively mild cases were maintained in health by salt only. The serum potassium was found to be raised in this disorder, and workers at the Mayo Clinic advocated a low potassium diet, but in the speaker's experience this had not been worth the enormous trouble of preparation. None of the various methods of extracting the active principle of the adrenal cortex in solvents such as glycerin which permitted its action when given by mouth had so far had material success. Adsorption on charcoal had proved efficacious in animals, and he had seen some degree of benefit in man from this therapy. No major advance seemed likely until the essential constituent of the adrenal cortex had been isolated and synthesized. The isolation had been effected by Steiger and Reichstein of Zürich in 1937, and the preparation had been named corticosterone (cortin), but it had not yet been synthesized, though a closely related compound, desoxycorticosterone, had been synthesized from stigmasterol. He had found 5 mg. of this substance in 1 c.cm. to be equivalent to 10 c.cm. of cortical extract in treating Addison's disease. It was an oily solution and was injected intramuscularly.

Dr. Simpson also reported on the effect of subcutaneous implantation of this substance. Its anabolic action reminded him of that of testosterone propionate, and his previous experience of such procedures related to a castrated male in whom he had implanted tablets of testosterone, the effect of which remained at a maximum for about two and a half months. In connexion with Addison's disease he had tried the effect of inserting four tablets of 50 mg. of desoxycorticosterone underneath the skin under local anaesthesia. Over a period of a few weeks the absorption appeared to be as effective as when the material was given by daily intramuscular doses. In one patient in whom 5 mg. of the preparation twice daily had proved to be a substitute for 20 c.cm. of cortin he implanted tablets in the way described, and she had carried on quite well. He also reported good results in three other cases, but he was convinced that this synthetic hormone, desoxycorticosterone acetate, was not the only essential principle in the protein cortical extract.

Maintenance Dose with Cortical Extract

Dr. J. F. WILKINSON said that the doses of cortical extracts or synthetic desoxycorticosterone might be considerably reduced by the use of subsidiary treatments, particularly salt or salt mixtures, and by potassium-free diets. He described some work carried out under the auspices of the Therapeutic Trials Committee of the Medical Research Council. In a group of thirteen patients with Addison's disease who had been treated with cortical extracts four had died, two of these being found to be grossly tuberculous. The nine surviving patients had been on cortical extract for varying periods, in one case for fifty-six months. All were typical cases with the classical symptoms. One of them had had in the course of fourteen months as much as 6 litres of cortical extract, and his final maintenance dose was 20 c.cm. daily. Several of the patients had now been put off cortin, but they were all having salt. Cortical extracts were obviously of great value in maintaining many of these patients, but they were so costly that there was a tendency among doctors to reduce the amount given in treatment to dangerous levels.

Desoxycorticosterone had been given to four patients in his series, three of whom were well at the present time; one had died. This last showed at necropsy the largest tuberculous suprarenals he had ever seen. The best results with this preparation were apparently in patients free from tuberculous foci. The amounts given, intramuscularly, had been from 5 to 18 mg. daily; no reactions either local or general had been observed. Two patients had been put on to maintenance doses of 5 mg. weekly, and one on to this dose twice weekly. Cortical extracts might be required in initial daily doses of 60 to 100 c.cm., and some patients might need a daily maintenance dose of 20 to 30 c.cm., while others required less than 2.5 c.cm. monthly, particularly when taking increased salt. Desoxycorticosterone appeared to be a complete substitute for the natural cortical extracts, but until a larger number of cases had been compared it was difficult to assess the exact clinical equivalence. There was no doubt that salt had a place in the treatment of Addison's disease in severe or moderately severe cases, but he did not think that salt by itself was of any value at all. There were patients who could not tolerate salt in any dosage. He also exhibited the low potassium diet sheets which were recommended. The diet was deficient in most mineral salts. The patients were put on to the best white bread and cereals, but their intake of meat and vegetables had to be restricted. They were given soups, sauces, meat extracts, and chocolate.

Anaphylaxis after Intravenous Administration

Dr. H. P. HIMSWORTH said that by means of cortin and salt cases of Addison's disease could be controlled and a fair measure of well-being imparted. He was convinced of the deleterious effects of a high potassium intake, and while it might not be advisable to give a patient a low potassium diet it was certainly necessary to ensure that he did not take a high one. He had found cortical extract to be an extremely reliable preparation, but one fatal case of anaphylaxis had occurred in his experience. This was a patient who first came under treatment in the summer of 1936. She was eventually sent out and ordered 5 c.cm. of cortin daily. About a fortnight before Christmas she received her last injection of cortin. She then contracted influenza, but she was no worse than any other influenzal case. One morning, however, she was found unconscious. A doctor gave her 5 c.cm. of another preparation of which the speaker was unaware, and she was sent to hospital, where as much as 80 c.cm. of cortin was given intravenously. She regained complete consciousness, but a few hours later she began to breathe with difficulty and died the following morning. At post-mortem the lungs, instead of collapsing, ballooned out over the cut edges of the ribs. The cause of the disease was atrophy of the suprarenals.

He had tried desoxycorticosterone acetate (Ciba) in two cases of Addison's disease. The blood chemistry was kept within normal limits throughout the period of observation, but in both cases, after an initial period of increased well-being, clinical relapse occurred. There were two possibilities: (1) that the preparation was toxic over a long period; (2) that it did not contain all the necessary active principles of the cortex required to treat Addison's disease. While cortin was both reliable and practically free from danger in the treatment of Addison's disease, desoxycorticosterone must be said to be still in the experimental stage.

BRONCHIECTASIS

A meeting of the North-Western Tuberculosis Society was held in Manchester, with the president, Dr. G. JESSEL, in the chair. Dr. W. BROCKBANK and Mr. A. GRAHAM BRYCE read papers on bronchiectasis from the points of view of the physician and the surgeon respectively.

Dr. Brockbank said that in bronchiectasis there was dilatation of the bronchi or bronchioles, which might or might not become secondarily infected. Among the causes of this condition he mentioned congenital narrowing of the bronchi, pressure from a growth or aneurysm, intrabronchial tumours or foreign bodies, and most of the inflammatory diseases of the lungs and air passages. It was possible that inflammatory changes so weakened the bronchial walls that they bulged on coughing, the bronchial musculature lost its tone, and the bronchi became dilated. The elastic fibres and, later, the cartilage were destroyed and replaced by fibrous scar tissue, which might cause a partial obstruction damming back the expectoration in the alveoli and causing a softening of the walls. There was also a pull exerted on the softened walls by the fibrous tissue. This theory did not account for the dry variety of bronchiectasis in which there was little cough or expectoration, rarely any evidence of bronchitis, and very little fibrosis. In a recent paper Lander and Davidson had recorded their conviction that massive collapse of the lung was a necessary and an invariable antecedent to the bronchial dilatation. Whatever might be the cause or whatever the type of bronchiectasis it was essential to realize that the dilatations were nearly always surrounded by fibrous tissue, that the cavities were themselves lined with epithelium, and that it was almost always the lower lobes which were affected. These facts influenced the whole course of treatment.

Signs and Symptoms

Dr. Brockbank described in detail the physical signs and symptoms of advanced bronchiectasis, and said that the copious foul-smelling yellow sputum was characteristic of the advanced stage of the disease only. In the early stages of the disease the signs and symptoms were slight. In the dry type of bronchiectasis there was cough, with not more than half an ounce of sputum—which was not typical bronchiectatic sputum—and haemoptysis, which might be repeated and profuse. The constitutional symptoms were mild or absent and the physical signs indefinite. Other types might be masked by contributory diseases—chronic bronchitis, asthma, pulmonary fibrosis, tumour, or emphysema. The bronchitic type was the most common. Here physical signs, apart from rhonchi and rales, were generally absent, and the diagnosis was only suspected from the clubbing of the fingers, the unsatisfactory response to treatment, and, radiologically, from fibrosis at the bases of the lungs.

Bronchiectasis was usually bilateral and the treatment was usually medical, for the surgeon was concerned only with unilateral disease. In dry bronchiectasis only a simple tolu and squill cough mixture and breathing exercises were needed. Where the sputum was fairly copious, creosote, in capsules, in the form of an inhalation by means of a Yeo inhaler, or in a creosote chamber, was

useful. Some preferred the use of garlic instead of creosote. Menthol and guaiacol, injected intratracheally by means of a special syringe, was also advocated. Postural drainage was valuable, but must be kept up indefinitely. It was necessary to determine the exact area diseased so that the posture adopted should drain the sputum into the main bronchus, from where it could be expectorated. He considered the types suitable for operation were: (1) cases with unilateral disease; (2) cases with foul-smelling sputum; (3) cases with recurrent attacks of pneumonitis; (4) cases in which the continual coughing of sputum was an embarrassment; and (5) cases of dry bronchiectasis with repeated haemoptyses. In the vast majority of cases of bronchiectasis artificial pneumothorax had proved a failure.

Surgical Treatment

Mr. Graham Bryce referred to Carl Hedblom's use of phrenic evulsion in cases of delayed resolution or early pulmonary fibrosis after bronchopneumonia which brought about symptomatic cures; the patients did not relapse and lipiodol failed to show bronchial dilatation. Alexander, too, had had good results from the phrenic crush operation in cases of suppurative pneumonitis before the stage of abscess formation or of chronic bronchiectasis. Artificial pneumothorax and phrenic evulsion were on the whole unsatisfactory. Phrenic evulsion had a special disadvantage in that it interfered with the efficiency of the cough mechanism. Thoracoplasty had had a thorough trial and had now been almost entirely abandoned in the treatment of non-tuberculous bronchiectasis. He had little to add to what Dr. Brockbank had said about postural drainage, and he agreed that it was a method of the greatest importance by itself or in the pre- and post-operative management of cases treated surgically. He regarded bronchoscopic aspiration for bronchiectasis as largely a waste of time, although he advocated diagnostic bronchoscopy in every case.

Pneumonectomy and Lobectomy

Bronchiectasis did not respond to treatment by external drainage as it was difficult to drain more than a few of the affected bronchi. Thoracic surgeons nowadays considered that almost the only worth-while method of treating the disease was by ablation. Defining the term "pneumonectomy" he said it meant, rather paradoxically, either excision of part of a lobe or the extirpation of an entire lung. Cautery pneumonectomy had almost entirely given place to lobectomy or total pneumonectomy, but he thought it could be undertaken in selected cases more often than it was, although it left more deformity of the chest wall than either of the more radical procedures. There was much discussion concerning the relative merits of the one-stage and two-stage methods of lobectomy. He described the one-stage method of Brunn and Shenstone and also the two-stage or Alexander's method. There was no doubt that the one-stage technique was gaining ground. In patients awaiting lobectomy it was important to make specific inquiry regarding the possibility of an inhaled foreign body. In the medical examination attention must be paid to the heart muscle, the vital capacity, and the possibility of amyloid disease. The blood must be grouped and the nasal sinuses *x*-rayed. The teeth should have any necessary treatment. Tuberculosis must be excluded. It was important that the patient should have postural drainage for four to six weeks, and it was advisable to begin breathing exercises before the operation.

The exact anatomical distribution of the disease was extremely important to the surgeon, and it was necessary to make bronchograms of each lung separately. An apparently excellent postero-anterior bronchogram was often found to be inadequate when a lateral film was made. In children, who required a general anaesthetic for every *x*-ray examination with lipiodol, it was often possible to get an accurate localization of the disease from a single picture. Where all the lobes of one side were found to be affected the introduction of a little lipiodol into the base of the other lung might demonstrate that the case was beyond the reach of surgery and thus save the patient attending for another bronchogram. For bronchography he used a catheter introduced orally through a laryngoscope or, in some cases, Singer's method. Blood transfusion or oxygen-tent therapy was often advisable in the immediate post-operative period, although he did not use them as a routine. A bronchial fistula and a localized empyema occurred in practically every case. The patient was usually in hospital for two months after his operation.

Results of Operation

Professor Sauerbruch's recent survey of 387 lobectomies revealed a mortality which varied from 13 per cent. to 24 per cent., the average being 21 per cent. Churchill of Boston had a series of forty lobectomies for bronchiectasis with a mortality of 5 per cent. Mr. Graham Bryce's own series comprised twenty-eight operations on twenty-seven patients. The immediate mortality rate calculated on five patients who died within two months of the operation was 14.3 per cent. Two patients died later, one five months after the operation and one two years after; this gave a total mortality of 25 per cent. Of the remaining twenty patients four were still under treatment, though in the convalescent stage. Of sixteen others, in thirteen the result had been very satisfactory and the patients were able to lead practically normal lives. In none of these was the sputum offensive, even where it had been before the operation. The other three patients were all in good general health although they had some degree of residual bronchiectasis. Mr. Graham Bryce concluded his remarks with the warning that thoracic surgery was a very specialized field in which experience was dearly bought, but in his opinion the surgical treatment of bronchiectasis was well worth while.

PATHOLOGY OF CHRONIC AORTIC VALVULAR DISEASE

At a pathological meeting of the Liverpool Medical Institution on December 1, with the president, Dr. E. GILBERT BARK, in the chair, Dr. R. Y. DAWBARN read a paper on the pathology of chronic aortic valvular disease.

Dr. Dawbarn said that there were three common chronic diseases of the aortic valve—syphilis, rheumatism, and Mönckeberg's calcific degeneration. In many cases the macroscopical features sufficed to distinguish these conditions, but difficulty was most likely to occur where much calcification had followed an old rheumatic process, and where the calcific degeneration of Mönckeberg was accompanied by marked fibrosis. In such cases microscopical examination might be very helpful, and it was advisable to stain the sections by some method which showed the elastic fibres. In cases of old rheumatic disease the cusps were opaque and thick, especially along the free border, and some, or all, of the following microscopical changes could usually be found:

1. Thickening of the ventricular layer of the cusp with reduplication of the elastic lamina, especially in the subaortic angle.
2. Vascularization of the cusps and ring with capillaries and muscular arterioles.
3. Scarring of the ring with increase of elastic fibres.
4. Calcification in either the ventricular or aortic layer.
5. Thickening of the subendothelial tissue in the pocket.

Rheumatism in early life might lead to a bicuspid deformity of the aortic valve; Louis Gros considered that

most cases of this condition, discovered in adults, had a rheumatic basis. Mönckeberg's calcific degeneration was a disease mainly of the fibrous aortic layer of the cusp characterized first by the deposit of lipoids and then by calcification. Large calcified, craggy masses might be formed in the cusps and project mainly into the sinuses of Valsalva. The ventricular layer of the cusp was not thickened, as in rheumatism, but was usually normal, or else thinned out by reason of the stretching and distortion caused by the calcareous masses.

In the discussion which followed Dr. W. S. SUTTON and Dr. A. M. ABRAHAMS took part. Pathological specimens were then shown by Mr. HUGH REID, Dr. G. D. OWEN, and Dr. RONALD ELLIS.

Local News

ENGLAND AND WALES

Westminster Hospital Medical School

The annual dinner of past and present students of Westminster Hospital Medical School was held at the Trocadero on December 13, with the dean, Dr. Adolphe Abrahams, in the chair. Proposing the toast of "The School," Dr. Abrahams said that the Westminster was now in the greatest year of its history, and those present were paying honour to the school and to all generous benefactors who had helped to build it. The president (Lord Wigram), the chairman (Mr. B. D. F. Docker), and the secretary (Mr. Charles M. Power) were with them that evening to prove the close bond between hospital and school. When they dined together once again in ten months' time the new Westminster would be completed. Dr. Abrahams paid affectionate tribute to Mr. E. Rock Carling, the senior surgeon, without whom it was difficult to believe that there would ever have been a new Westminster. After some witty suggestions for slogans for each department, so that the hospital might "put itself across to the public," he called upon a distinguished old student, Mr. C. Price Thomas, and the honorary secretary of the Students' Union, Mr. G. Martin Jones, to reply to the toast. Mr. Rock Carling proposed "The New Hospital" and spoke of the adaptation of its structure to function and of the old fine spirit of the place which would carry on into the new phase. He said that in several ways the Westminster had given a lead to other hospitals in respect of construction and equipment. Mr. Docker, replying to the toast, declared that the new building would be one of the finest hospitals of its kind in the country. It was being erected with the blessing of the Ministry of Health, the L.C.C., the Middlesex County Council, and the Westminster City Council. In pursuit of its ideal of co-operation, general practitioners would be encouraged to visit their patients in the hospital, to act as clinical assistants, and to attend short postgraduate courses. The hospital would provide 409 beds (350 of them available for teaching purposes), and it was safe to assume that patients would be admitted to the new building in May next. The senior staff had been most helpful and unselfish in tackling the problem of allocation of beds between the various departments. The health of the guests was submitted in happy phrases by Sir Stanley Woodwark, who welcomed many old friends of the hospital and school, and in particular Dr. Robert Hutchison, P.R.C.P., Professor J. A. Ryle, Professor G. E. Gask, Dr. K. J. Franklin, and the Editors of the *Lancet* and the *British Medical Journal*. Lord Macmillan, in acknowledging the toast, said that London University was proud of its medical schools and of their work in promoting the greatest of the sciences. The last toast, very warmly received, was that of "The Chairman," proposed by Mr. Arthur Evans.

Tuberculosis in Lancashire

The report of the Central Tuberculosis Officer (Dr. G. Lissant Cox) for the year 1937 shows that the death rate from pulmonary tuberculosis in the County of Lancashire has remained the same as in the previous three years—0.46 per 1,000 of the population—and there has been an increase of sixty over 1936 in the number of new cases of pulmonary tuberculosis reported. Similarly in regard to non-pulmonary tuberculosis, the death rate—0.10 per 1,000 of the population—is the same as in 1935 and 1936, and the number of new cases reported shows an increase of twenty-nine over the previous year. Bearing on the importance of early diagnosis in the campaign against tuberculosis, Dr. Lissant Cox carried out an investigation, and found that between 1920 and 1937 the duration of symptoms from their onset to the date the patient consulted his medical attendant had declined by 61 per cent. to 2.9 months for negative-sputum cases, and by 48 per cent. to 4.2 months for positive-sputum cases. The period the patients were kept under observation by their medical attendants showed similarly a decline of 40 per cent. to 3.2 months for negative-sputum cases, and of 27 per cent. to 3.5 months for positive-sputum cases. Dr. Cox comments that "the reductions are welcome, but there is still much room for further improvement both on the part of the patient and the medical attendant." Co-operation with the medical practitioners, together with the medical officers and sanitary inspectors of county district councils, is shown in the fact that no less than 92 per cent. of new cases (excluding contacts) were sent *before notification* to the tuberculosis officers for an opinion as to diagnosis and treatment. The examination of contacts remains unsatisfactory—only 45 new child contacts and 51 new adult contacts were examined per 100 deaths from tuberculosis. The respective figures for England and Wales are 95 and 82, and even these figures are generally admitted as being far too low. Finally, attention may be drawn to the liberal staffing of the dispensaries in Lancashire; it compares very favourably with other counties in England. The report contains a very clear and well illustrated account of tomography by Dr. F. S. C. Bradbury, which deserves wide publicity.

Empire Rheumatism Council

The Empire Rheumatism Council began its work in October, 1936, and had as one of its avowed objects the education of the public with regard to rheumatic diseases. Its educational programme has been continued with success, despite the preoccupation of the British people in recent months with gas masks which do exist and bomb-proof shelters which do not. With the co-operation of the Press the man in the street is gradually being made to realize that rheumatism is a disorder affecting not only the health but also the economic well-being of the community. An affiliated Council is undertaking the same sort of educational work in Canada, and it seems likely that an Australian Rheumatism Council will come into being within the next few months. The volume of work undertaken by the Scientific Advisory Committee of the Council has been such that it has become necessary to establish three subcommittees—bacteriological, chemical, and physical—for the preliminary examination of suggestions for treatment. Dr. C. A. Green has been appointed to take direct charge of an investigation into the causes and the best means of prevention and treatment of rheumatic disease in the training establishments of the Royal Navy. The Medical Research Council has co-operated in the important task of allotting research grants and fellowships, and work is in progress on a variety of problems, the most important of which is perhaps that of preparing a report on a system of treatment which might be economically applicable on a national scale. It is hoped that this particular report will be completed in the early part of the New Year. New treatment centres

have been established in connexion with different hospitals during the past year, but they are still too few. It is probably true to say that even now specialized treatment is available in England and Wales for less than 10 per cent. of the million or more adult cases of rheumatic disease and for less than 25 per cent. of about half a million juvenile patients. These disturbing figures were given by Lord Horder, the chairman of the Empire Rheumatism Council, on Monday last in the course of his second annual report Even so, the situation is better than it was twelve months ago, thanks largely to the efforts of the Council. Lord Horder also referred to the recent Cancer Bill and went on, perhaps prophetically, to hope that "with the growth of knowledge of the tragic degree of human suffering and economic loss caused by rheumatism this will also shortly be fully recognized as a national problem."

Manchester Hospitals Advisory Board

The third annual report of the Manchester Joint Hospitals Advisory Board reveals continued progress in co-operation between voluntary and municipal hospitals in the Manchester area. A scheme for co-ordinating the treatment of fractures, which follows the principles laid down in the British Medical Association's report, has been agreed upon; the existing fracture services will be grouped in northern, central, and southern areas and a free interchange of patients between the hospitals within each group should make for greater efficiency and should steadily diminish the overlapping and duplication of services which seemed inevitable only a few years ago. Thoracic surgery in Manchester is to be concentrated in two units with one surgeon in charge of both; that at the Royal Infirmary will deal with all non-tuberculous cases, that at Withington Hospital with all tuberculous cases. The question of establishing a central hearing-aid clinic is being considered and work on other problems of co-ordination continues. In Manchester, at least, it would seem that Section 13 of the Local Government Act of 1929, which has since been repealed and re-enacted as Section 182 of the Public Health Act, 1936, is being implemented as fully as it possibly can be.

Food and Drugs Act, 1938

The Minister of Health has issued a circular to all local authorities and public analysts on the new Food and Drugs Act passed last July. The Act does not come into force until next October, but it should receive early study and attention, for it represents a very great simplification of the existing Food and Drugs Law, a process which has involved many minor amendments. The opportunity has also been taken to introduce into the general law provisions which have up to now only been included in Local Acts. The existing legislation dates back many years—some of it to the sixteenth century—and modern methods of food sophistication and advertising have revealed loopholes which it is hoped the new Act will effectively close. Among the new provisions which will become enforceable in October next are the registration by local authorities of premises used for the sale or manufacture of ice-cream and the preparation or manufacture of sausages or preserved food; ice-cream vendors must have their names and addresses on stalls, carts, barrows, etc., and this requirement may be extended in any district to all or any other foods by the local authority. Slaughterhouses and knackers' yards will all in future be licensed for limited periods only, and this includes those now known as registered slaughterhouses and those licensed without limitation of time. It will be an offence to dispose of meat from a knacker's yard for human consumption, and local authorities may require records to be kept of animals and carcasses in such yards. In addition new requirements are laid down as regards rooms, yards, etc., in which food is sold or prepared for sale. The Act largely follows a draft Bill prepared by a departmental committee and explained by them in their report published in December, 1937 (Cmd. 5628; 1s.). This report very fully explains the amendments in the law, and the circular now issued merely elaborates certain points. The circular is numbered 1755 and may be obtained from the Stationery Office, price 2d.

The L.C.C. and the Cancer Bill

In reporting to the London County Council on the Cancer Bill, which received a second reading in the House of Commons last week, Mr. Somerville Hastings and Mr. Charles Latham, chairmen respectively of the Hospitals and Medical Services and the Finance Committees of the Council, state that substantial facilities already exist for the diagnosis and treatment of cancer in London, and while it is recognized that there is a need in various parts of the country for the provision of further facilities, it is not clear, so far as London is concerned, that there is any need for the imposition of a statutory duty upon the L.C.C. to ensure that arrangements for the diagnosis and treatment of cancer shall be adequate. The Council treats cancer patients in all its twenty-seven "acute" general hospitals, and there are special units for deep *x*-ray and radium therapy at Lambeth and Hammersmith Hospitals. Many voluntary hospitals treat cancer patients, and some have spent considerable sums on radium and *x*-ray apparatus. The total number of admissions of cancer patients to the Council's hospitals in 1937 bordered on 7,000. At a conference between the Minister of Health and representatives of the L.C.C. and others it was understood that the inclusion of voluntary hospitals as circumstances may render desirable in schemes prepared by local authorities may embrace not only the provision of treatment but also the provision of diagnostic centres. The choice of hospitals, both municipal and voluntary, for inclusion in schemes will naturally depend upon the needs of the area to be served and upon the service which the hospitals are equipped to render.

At the interview with the Minister the Council's representatives submitted that Exchequer grants towards the expenditure of voluntary hospitals in London should be made direct to such hospitals without supplement from the rates and without prejudice to the Council's responsibility for the preparation of a scheme for cancer in the metropolis. The Minister, however, stated that he thought the scheme would work more smoothly and efficiently if the control were in the hands of the local authority, and that it would be better for the authority to pay the grant due under the scheme to the voluntary hospitals. Those speaking for the Council do not share this view, and hold that grants from public funds to voluntary hospitals for cancer treatment and facilities should be paid direct by the Minister. It is also considered that, as the additions to the expenditure of local authorities by the imposition of further statutory duties have already heavily intensified the Council's financial burdens, the proposal to scale down the grant in respect of the new cancer service below a minimum of 50 per cent. to any authority should be resisted. The Minister's suggestion is that as the existing facilities for dealing with cancer in the areas of the "richer" authorities are so much better than in the areas of the "poorer," the cost to the former would be comparatively small, and therefore there is justification for their percentage of Exchequer grant being scaled down.

It is anticipated that the unit cost in London will be materially higher than the country average, having regard to the higher standard of costs to which the cancer service in London will unavoidably be subject. The L.C.C. maintains that the object of control over the expenditure of local authorities could equally well be secured by substituting for the average for the whole country an approved unit for regions in which special local factors would receive proper recognition, and the Minister has intimated that he is prepared to consider this point.

SCOTLAND

The R.C.P. Laboratory at Edinburgh

The annual report of the Laboratory of the Royal College of Physicians of Edinburgh records the resignation of its Curator, Sir Robert Philip, after nearly thirty years of active official association with the laboratory. Sir Robert had held the appointment of Curator for the past fourteen years. During the year under review thirteen papers were published by workers in the research department. Further investigation of anti-rabies treatment statistics includes a study of the figures from the Union of Soviet Socialist Republics. It appears that during the years 1927 to 1934, 343,149 persons were treated in Russia, and 584 (0.17 per cent.) of them contracted rabies. The most striking feature of these statistics is a steady decline in the number of people presenting themselves for treatment, attributable to "an abrupt diminution of rabies in animals in the U.S.S.R." Among other researches are studies of the mode of action of cod-liver oil and certain other oils in the treatment of wounds. Experiments *in vitro* have shown that cod-liver oil, both in the presence and in the absence of a nutrient medium, possesses a strong bactericidal action, which is markedly increased by previous irradiation of the oil with ultra-violet light. Of other oils investigated, only linseed oil proved to be more potent than cod-liver oil, but for various physical reasons this substance is contraindicated as a means of treatment. In the field of parasitology trichomonas infections have been studied, and it has been demonstrated that *Trichomonas vaginalis* and *Trichomonas intestinalis* differ from one another in morphological and cultural character. Vaginal infection with this parasite appears to be far more common than is generally supposed. Conditions predisposing to infection, and the part played by the parasite in causing sterility and other pathological changes in the genital tract, are under investigation.

The Blind in Scotland

At the opening of an extension to the Royal Blind Asylum, Edinburgh, on December 9, Mr. W. J. Anstruther Gray, Parliamentary Secretary to the Secretary of State for Scotland, said that this institution had been founded by Dr. Johnson of Leith in 1793, and the school had been added by James Gall in 1835. Since the Blind Persons Act of 1920 expenditure in Scotland on behalf of the blind had risen from £80,000 to £300,000, and 9,000 blind people were provided for. The number of blind children had greatly decreased, and the increase in the total number of the blind was due to longer life. Mr. James Adshead, chairman of the Board, said that estimates for the extension amounted to £20,000, of which education authorities throughout Scotland who sent children to the school were expected to provide three-fourths, leaving about £5,000 to be found by the institution itself.

Treatment of Venereal Diseases

The current annual report of the City and Royal Burgh of Edinburgh Venereal Diseases Scheme opens with a masterly synopsis of the advances in treatment during the last twenty-five years. It is recalled that it was the Edinburgh Corporation which, in 1928, promoted and presented to Parliament a Bill designed to secure compulsory powers for the examination and treatment of known or suspected cases of venereal disease. The Bill, however, was not passed, for the enforcement of such legislation would present considerable difficulties. The employment of sulphanilamide and its derivatives produced highly satisfactory results in the treatment of gonorrhoea during the year under review. An allied preparation—uleron or diseptal—was also given extensive clinical trials. The clinical officer states that in the majority of cases the effect of these new drugs has been amazingly rapid, resulting in the disappearance not only of the signs and symptoms of the disease but also of the causative organisms within a few days. The response, however, was not satisfactory in every case, and to this extent their action may be described as inconstant and "capricious." The report records a considerable increase in the number of new patients. This is chiefly accounted for by a larger number of cases of non-specific venereal disease, syphilis and gonorrhoea showing a slight diminution. Analysis of new cases gives the following figures, those of the previous year being shown in parentheses: Total number 2,860 (2,540); syphilis 686 (695); gonorrhoea 1,256 (1,280); chancroid 35 (27); non-specific venereal disease 883 (538). The last named thus forms nearly one-third of the total.

Dundee Health Report

Attributable to simultaneous outbreaks of whooping-cough, influenza, and primary pneumonia during the first quarter of the year, a rise in the general death rate is recorded in the annual report for 1937 of the Public Health Department, City of Dundee. The rate for the year was 15 per thousand, compared with 14.1 in 1936 and 13.2 in 1935. These three diseases caused 406 deaths —whooping-cough 51, influenza 113, and pneumonia 242. Of the deaths from whooping-cough twenty-four occurred in infants under 1 year, and twenty-four in children aged 1 to 5. Only one death was certified as due to whooping-cough alone. The remaining cases suffered from complications, of which pneumonia was the most frequent. Among other infectious diseases scarlet fever and chicken-pox also showed an increased incidence, but with regard to measles intimations of only 312 cases were received, compared with 1,862 in 1936. The majority of the measles cases occurred in the last two months of the year under review, conforming with the usual tendency of this disease to make biennial appearance in epidemic form in the city. Of ten notifications of enteric fever, all of which were admitted to hospital, the diagnosis was accepted in eight—two typhoid and six paratyphoid B. In three of the latter cases it was thought probable that the source of infection might have been associated with the eating of periwinkles.

Correspondence

Lay Analysts at L.C.C. Mental Hospitals

SIR,—I think that you may be interested to learn the circumstances under which lay analysts are to be allowed to receive instruction in the London County Council's mental hospitals.

On November 15, 1938, a report from the St. Bernard's Hospital Committee was received by the General Purposes Subcommittee of the Mental Hospitals Committee, stating that the Director of the Institute of Psycho-Analysis had asked for permission for a small number of lay analysts to observe the technique and to study the reactions of patients at St. Bernard's Hospital, and that the medical superintendent was willing to co-operate. As this involved an important question of principle, we, the Municipal Reform Party members, asked whether before reaching a decision the Board of Medical Superintendents might be consulted, as it was a matter on which we as a lay committee were not competent to decide. This was refused. We then asked whether the question could be deferred until the committee of the British Medical Association which we understood was inquiring into the whole question of the scope of the work of lay analysts had reported. This was

also refused. The matter then came up to the Mental Hospitals Committee. Dr. Odlum moved and I seconded that the matter be deferred pending a report from the committee of the B.M.A., and we were outvoted. We then asked that the matter should be reported immediately to the Council, and this was refused. Finally, under Standing Order 139A, on the request of twenty members, the matter had to be reported at once to the Council, but by rule of the Council only two five-minute speeches on each side were allowed, and therefore it was impossible fully to state our objections.

These are briefly: (1) That the matter was *sub judice* by a committee of the British Medical Association, and therefore might be prejudiced. (2) That the examination of a patient was confidential, and persons would be present who were not bound by any ethical rules and were not pledged to secrecy. (3) That before agreeing we should have full information (*a*) as to the scope of the work to be undertaken, and (*b*) as to the safeguards which were to be demanded for the protection of the public, such as whether the lay analysts would always have to work under medical supervision, etc.—I am, etc.,

London, S.E.1, Dec. 13. BARRIE LAMBERT.

Radium Policy and Practice

SIR,—In your account of the annual report of the Radium Commission (December 10, p. 1217) you say, "it is to be hoped that the formation of a therapeutic centre [at Cambridge] in the near future will give practical expression to the ever-increasing developments of experimental radiology." As these words imply that there are no facilities for the treatment of cancer at Cambridge, and that the authorities at Addenbrooke's are adopting an obscurantist attitude, perhaps you will permit me to state the facts.

Addenbrooke's was one of the very first hospitals in the country to treat cancer by *x* rays, a plant having been installed in 1921 in charge of the late Dr. Shillington Scales. For some time past two plants have been in constant use. For many years candidates for the Cambridge D.M.R.E. have been taught here. The follow-up system is probably as efficient as that of many of the radium centres. As for the quality of the work, it is not for me to express an opinion. In addition to serving our own large area we have had to treat patients from one of the radium centres which, be it noted, only in the last year has provided facilities for the purpose. As regards radium the hospital possesses its own supply, purchased two years before the formation of the Commission, while in addition the gynaecological department, under Dr. Canney, uses radium lent by the Medical Research Council.

In spite of all this the Radium Commissioners, when they first established their centres, were apparently completely oblivious of the claims of Cambridge. They made no effort to investigate our achievements, difficulties, or potentialities. They merely sent us gratuitous advice to the effect that we should send our patients to Norwich. It was not until about two years ago that they made the discovery that Cambridge presented certain advantages possessed by few other towns. Since then they have lost no opportunity of proclaiming their newborn infatuation and lamenting the failure of the hospital, partly on financial grounds, to respond to their advances.

May I also dispute your statement that "treatment by high-voltage *x* rays is an indispensable adjunct to treatment by radium"? Although this view may still be held in certain quarters, there is a widespread and increasing belief that the vogue for radium is declining and that more is to be expected from *x* rays. I think I am voicing the opinion of my colleagues when I say that in our negotiations with the Commissioners this belief at least played a part in our declining to recommend to the General Committee an offer which would have imposed too great a strain on the hospital's resources. While naturally willing to try every method we have refused to be stampeded into the view that radium is and must remain the dominant line of attack.

For my part, with all due respect, I cannot subscribe to the view that a Radium Commission which has on it no representatives of qualified radiologists is necessarily the best body to decide upon what constitutes the most efficient method of treating cancer.—I am, etc.,

The Douty *X*-ray Clinic, Addenbrooke's Hospital, Cambridge, Dec. 13. FF. ROBERTS.

Domiciliary Emergency Treatment of Eclampsia

SIR,—Dr. H. J. Thomson's note (*Journal*, December 10, p. 1204) regarding the above is interesting, but his table of results does not quite fully support his contention. During 1937 the deaths from eclampsia were *nil*, a greater number of cases (seventeen) being treated in hospital than at home (eleven). In that year, therefore, treatment in hospital would seem to have been at least as successful as domiciliary treatment.

Dr. Thomson's table gives the results of cases treated at home by the emergency team. Additional value would attach to the table if it stated how many cases of eclampsia were treated other than by the emergency team, and what the mortality was in these cases, if any. I notice that the incidence of eclampsia as treated by Dr. Thomson's service appears to have risen steadily during the years covered by his table. Does this mean that such cases are being referred to hospital in greater numbers?

I believe that the treatment of eclampsia lies in the prevention of its onset by timely termination of pregnancy rather than in the treatment of the established condition. The routine adopted in the Croydon Obstetric Service is that all cases seen at the ante-natal clinics whose diastolic blood pressure is 90 or over, with or without albuminuria, are admitted to hospital, and if the usual dietary and other treatment does not result in subsidence within about ten days the pregnancy is terminated. Cases with definite pre-eclamptic signs, especially severe headache and visual disturbances, are not allowed so long a period if there is not definite amelioration of symptoms within the first few days. As a result of the rigid observance of this rule over 300 cases of hypertension with or without albuminuria have been admitted to the Croydon County Borough Hospitals during 1937 and 1938, and no case so admitted has developed eclampsia. Two cases of established eclampsia were admitted in 1937, the pregnancy being terminated immediately in each case, with no maternal or foetal mortality.

The urea-concentration test is invaluable in these cases, and I use it, combined with a blood-urea estimation, in all cases of doubt. I look upon a poor urea-concentration test as an absolute indication for the termination of pregnancy. The chances of permanent renal damage in these cases are far greater than is generally supposed, and in my opinion this risk does not justify very prolonged treatment of pre-eclamptic conditions.

In the table on eclampsia in Dr. Thomson's report for 1937 I note that cases Nos. 6 and 10 were in hospital twenty-six and twenty-three days respectively before

delivery; No. 6 had four intra-partum fits, and in No. 10 the fits recurred in labour. Might not early induction have lessened the danger?

While congratulating Dr. Thomson on the excellence of his results for 1937, I feel that he must have had an extremely anxious time while the seventeen cases of eclampsia were in hospital.—I am, etc.,

RUFUS C. THOMAS, F.R.C.S.Ed., M.C.O.G.

Croydon Obstetric Service, Dec. 12.

Treatment of Placenta Praevia

SIR,—I have seen, somewhat belatedly, in the *Journal* of June 18 (p. 1334) a letter from Dr. Bethel Solomons, one of my former assistants at the Rotunda Hospital, under the above heading. It contains the following extraordinary statement: "I was brought up to believe in the value of vaginal plugging" [for placenta praevia]. Now the people who were responsible for the obstetrical "bringing-up" of Dr. Solomons were the late Sir Arthur Macan, Dr. Hastings Tweedy, and myself. Sir Arthur accepted vaginal plugging somewhat diffidently as a possible alternative to podalic version. Dr. Hastings Tweedy opposed the use of the plug in both his teachings and writings, and I have consistently done the same. Where, then, was Dr. Solomons brought up to believe in its value? Can it be that he confuses unavoidable and accidental haemorrhage, and has come to believe that the older teaching of the Dublin school on the treatment of the latter complication applies also to the former?—I am, etc.,

Christchurch, New Zealand, Nov. 23. HENRY JELLETT.

Treatment of Pneumonia

SIR,—I have been interested in the correspondence and reports relating to the above subject which have appeared in the medical press during the last few months, and I have naturally been impressed by the results of the practical application of up-to-date serological and chemotherapeutic methods. I have been struck, however, by the omission of any mention of quinine. I am not of the generation which was privileged to have personal contact with Burney Yeo, but I have had the good fortune to work under those who were taught by him. As a result I have employed very often his effervescent quinine mixture—quinine and citric acid in the one bottle and potassium bicarbonate plus nux vomica or potassium iodide in the other—according to the needs of the moment, and have never had reason to regret it.

Typing of the organism and the use of homologous serum is, of course, an excellent and everyday procedure in lobar pneumonia, but does not always produce equally good results in bronchopneumonia. In the practice of a large infectious hospital, such as that to which I am attached, lobar pneumonia is comparatively infrequent, but bronchopneumonia, in measles and whooping-cough especially, is a common and often fatal complication. Most of the cases are little children, and it is usually impracticable to give quinine by mouth to such young subjects. During the past eight years I have used quinine in the form of "transpulmin," an oily solution of quinine and camphor which is administered by hypodermic injection (Homburg Pharma Ltd., Africa House, W.C.2), and in that time have had occasion to employ it in hundreds of cases, with more than gratifying results. I usually give from 0.5 c.cm. to 1 c.cm. daily for a week, and after a few days' break, if the bronchopneumonic condition has not shown signs of clearing up, I begin a second course. It is equally efficacious in adult patients. Beyond a purely clinical satisfaction I have no interest in this preparation; but my primary object in writing this letter is to prevent so excellent a drug as quinine from being submerged by the more modern products, and at the same time to place on record my appreciation of a form in which it is usefully and scientifically available.—I am, etc.,

ELSIE A. BURNS, M.D., Principal Medical Officer, City Hospital, Fazakerley.

Liverpool, Dec. 10.

Glycosuria

SIR,—I have read with interest Dr. V. J. Glover's letter (December 10, p. 1224), in which he draws attention to the high incidence of glycosuria found in a group of apparently normal individuals. Of 132 volunteers for A.R.P. work eight men were found to have glycosuria, and Dr. Glover puts this forward as evidence of the frequent occurrence and insidious nature of diabetes. The fact that those persons found to have sugar in their urine "felt well and strong and all save one followed occupations involving hard work" is surely presumptive evidence against the diagnosis of diabetes, and no such label should be attached to them unless they prove to have abnormal blood-sugar curves. I do not think it is unreasonable to express the opinion that most, if not all, of these people who passed sugar at the time of the crisis would subsequently be found to be either sugar-free or to have normal sugar curves.

The mechanism whereby emotional stress produces transient glycosuria is possibly the same as produces diabetes when acting over a considerable period of time; but it would be incorrect to describe such transient examples as the subjects of diabetes. It is recognized that psychological stimuli may produce repercussions on the autonomic and endocrine systems sufficient to cause organic disease, but if every minor disturbance, such as temporary glycosuria during emotional stress, is regarded as evidence of disease it will lead to unnecessary restriction of the lives of many normal persons. Certainly they should be investigated, but their subjective symptoms should be given due weight. If an individual feels happy and well and is able to lead a normal life, it is at least presumptive evidence that he is biochemically correct.—I am, etc.,

S. A. PROPERT, M.A., M.R.C.P.

Colchester, Dec. 12.

SIR,—It is well known that many cases of unsuspected diabetes are discovered in the course of examinations for life insurance, even when there are no marked objective symptoms, especially in elderly people. But the discovery of glycosuria is an indication for further investigation rather than of final diagnostic significance. I do not suppose Dr. Vincent J. Glover (*Journal*, December 10, p. 1224) intended for a moment to convey that glycosuria and diabetes are synonymous. Eight men in 132 seems rather too high an incidence for true diabetes. Unfortunately Dr. Glover does not say anything about the specific gravities of the urines which gave "rapid and copious reduction."

In the course of many thousand examinations I have more than once found glycosuria of a psycho-adrenal origin in highly nervous subjects who on further examination had normal glycaemia, sugar tolerance, and renal threshold.

Dr. Glover mentions that all save one of the eight men "followed occupations involving hard work." If the

urines of a Rugby football team be examined at the end of a hard game many will be found to contain sugar, due to the escape of temporary hyperglycaemic sugar from the blood when the demand of the muscles has ceased and the physiological activity of the adrenals is slowing down as the body returns to a condition of comparative rest.

A few months ago I was puzzled by finding that a large number of female urines gave a copious reduction of a peculiar light purplish-red colour, both with Fehling and Benedict (0.3 c.cm. of urine to 5 c.cm., boiled for two minutes, and cooled by standing). After a lengthy investigation it was found that all the individuals concerned munched throughout the day large quantities of chocolate of a certain brand, which they bought at their canteen. On their abstaining from this chocolate the reaction disappeared from the urine.

In persons showing glycosuria without any objective symptoms of diabetes, whose glycaemia and sugar tolerance are normal, I always look for septic foci, especially in the teeth, tonsils, and gall-bladder. The association is commoner than is generally realized.

In conclusion I would like to stress the importance of scrupulous care, both as regards reagents and technique, even in a simple routine matter such as urine testing. It is easy to obtain fallacious results, especially when so-called "convenient" methods are employed. Glucose is not the only substance which will reduce copper. The fermentation test is easily applied and, if the ordinary test solutions are reduced, should never be omitted. There is a minute trace of sugar even in healthy urines; and I have seen a reduction in specimens highly concentrated through hard muscular work and copious perspiration. Glycosuria is also found in certain subjects of gastro-intestinal anastomosis—but, as Kipling says, that is another story.—I am, etc.,

Brookwood, Surrey, Dec. 10. H. M. STANLEY TURNER.

Health and Agriculture

SIR,—It was with the greatest possible pleasure that I read in the *Journal* of December 10 (p. 1208) your leading article "Health and Agriculture." As one who is intensely interested in the subject I hope your article will stimulate the minds of all who read it, so that by united effort some form may be fashioned out of the present chaos. You gave pride of place to milk as a "health-protective" food, and you go on to say that "if it were increased by one-third of a pint per day it would still be far below the level which is desirable on nutritional grounds; yet such an increase would entail an expansion of our natural milk output of no less than 65 per cent. At the present rate of productivity this would require the maintenance of 2¼ million more cows."

In reply to this statement, I believe I am quite accurate in saying it would not pay. In the first place, is this to be raw milk or pasteurized? If the former, then I can say definitely that to produce Grade A T.T. milk at present prices does not pay. The intensive grassland management required, the loss on cows failing to pass the tuberculin test, depreciation, etc., are such a handicap that the farmer is lucky if his accounts balance. During the last twelve months the *Field* published a series of articles which showed the sorry plight of agriculture in England. Letters have appeared more recently on the same subject in *Horse and Hound*, and, although not unanimous, the impression left on one's mind is the absolute futility of farming at present. Store cattle can be bought in the months of April and May, and sold in November at a loss. To fatten beasts therefore under present conditions is a speculative business.

The figures published showing the use made by the farmers of the lime and slag subsidy are disappointing; they reveal how little use relatively was made of this grant. May it be assumed from this that even the reduced cost was outside the means of the farmers? An analysis of the cost of production of vegetables and eggs would be sorry reading, I feel sure, but I have no practical experience of this. The towns have swallowed up the population; food is only regarded in the light of what it costs in the shops, and little thought, if any, is given to the method and cost of its production; the horse has been supplanted by the motor; hay, oats, and straw had a ready market when the horse did the work; nothing has been devised to replace this loss to the farmer. The recent crisis stirred up a great interest in A.R.P. work. Can something not be done to excite the interest of all in the much more important subject of food in peace and war?—I am, etc.,

Belfast, Dec. 13. W. A. ANDERSON.

SIR,—I should be greatly obliged if someone would demonstrate to me the appositeness of the oft-repeated slogan, "effecting a marriage of agriculture and nutrition," which you quote in a leading article on Astor and Rowntree's book in the *Journal* of December 10. Since "agriculture" desires to obtain as much as possible for its products—and "nutrition," naturally, to pay as little as possible for them—to my mind the prospective partners to the marriage are faced from the outset with a fundamental disagreement, which would tend to anything but conjugal harmony and constructive co-operation. In effect, this difference on the basic principle essential to such a pact separates them as far as it is possible for any incompatibility of temperament to do so. Nor—marriage or no marriage—can I see any justification for the prediction by the enthusiasts of a paradise awaiting agriculture as a result of its association with nutrition. Indeed, the fact that what is beneficial for the one is by that very fact detrimental to the other renders the fulfilment of such a forecast unlikely in the extreme.

If one considers, for instance, the case of milk, as matters stand we have on the one hand internal tariffs, subsidies, and bribes (to employ Astor and Rowntree's wording), all of which are disadvantageous to the "demanders." "Suppliers," however, will be advantaged for a time; but ultimately demand will be curtailed and either price will have to be reduced or some "suppliers" go out of business. On the other hand, in free-marketing conditions, with the operation of competition among "suppliers," "demanders" would at first have an advantage, which, however, would be rectified when, certain "suppliers" having gone out of business as the result of the competition, the demand would rise out of proportion to the available supply. There is the further point to be considered, and a very significant one from the point of view of nutrition, that in the first set of circumstances the tendency over a period would be towards diminished consumption of milk per head and a diminished production of it for the country as a whole; while, in the second case, the tendency would be in the opposite direction towards an expansion in both instances. We have here simply an illustration of the operation of Newton's third law of motion (applied to economics, as it can be) that to every action there is an equal and contrary reaction, the net result being a tendency to return always to an intermediate mean value.—I am, etc.,

Aberdeen, Dec. 12. J. P. MCGOWAN.

Primary Abdominal Tuberculosis

SIR,—We are grateful to Sir Henry Gauvain for his complimentary reference to our article pointing out the danger of primary abdominal tuberculosis in young children. We fully agree that in older children danger of dissemination of the disease from the primary focus is not so great and that early diagnosis is not so difficult as in early childhood. But in our paper we considered only children up to 5 years of age whose disease, before the onset of meningitis, was at the stage of a recent primary focus, the anatomical basis of which consists usually of a few moderately enlarged glands. No definite sign of this lesion exists, and the general initial symptoms given by Sir Henry Gauvain are too common to suggest tuberculous infection. One of us (S. E.) investigated from this point of view children complaining of vague abdominal symptoms and found that the tuberculin test in these children was less often positive than in children without abdominal symptoms. This shows that there is little likelihood of there being a causal connexion between a primary tuberculous focus and vague abdominal symptoms in children. By the time that secondary local or distant manifestations appear (for example, the "doughy abdomen" which Sir Henry quotes as presumptive evidence of tuberculosis) diagnosis is not difficult and the risk of dissemination is small. As we emphasized in our paper, it is before the disease is clinically recognizable that meningitis is likely to occur, and for this reason we stressed the necessity for prevention of infection.

It may be of interest to note that since our paper went to press four other cases of tuberculous meningitis following a primary abdominal focus of infection have come to necropsy at this hospital.—We are, etc.,

STEFAN ENGEL.
RUBY O. STERN.
G. H. NEWNS.

The Hospital for Sick Children, Great Ormond Street, W.C.1, Dec. 12.

Human Oil and Adherent Scars

SIR,—With reference to the article by Mr. Cecil P. G. Wakeley in the *Journal* of September 17 (p. 618), may I state that eighteen years ago I used injections of human oil, or as I called it melted human fat, in the treatment of adherent scars on the face in soldiers. Although it gave apparently satisfactory results at the time I gave up its use because it seemed to me that the scars tended to become re-adherent after the fat had completely absorbed, as it always did. A much more satisfactory and lasting method is to divide the adhesions subcutaneously and insert thin autogenous fat grafts, which do not tend to absorb, and the results are in my experience more efficacious and cosmetically much superior.—I am, etc.,

Wellington, N.Z., Nov. 23. H. P. PICKERILL.

For many years Mr. and Mrs. Alexander Farquharson have been developing and making known the idea that the study and teaching of sociology and civics should be based on observation and field work, and they are now organizing a winter school of sociology and civics from December 30 to January 6 at the London House of Citizenship in South Kensington. The Royal Borough of Kensington will provide the material for observational work and field studies dealing with the natural environment, historical development, and present-day social and economic conditions, Mr. and Mrs. Farquharson will have the assistance of Dr. Marie Jahoda, formerly of Vienna. Particulars may be obtained from the Hon. Organizer of Field Studies, Le Play House, 35, Gordon Square, W.C.1.

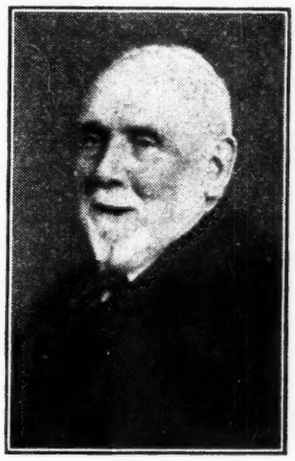
Obituary

SIR COOPER PERRY, G.C.V.O., M.D., LL.D., F.R.C.P.

Consulting Physician, Guy's Hospital

The death of Sir Cooper Perry on December 17, at the age of 82, removes an outstanding character and a mind of remarkable strength and versatility.

Edwin Cooper Perry, son of the Rev. E. C. Perry, had a brilliant career at Eton and King's College, Cambridge, which he entered as a scholar. He was Senior Classic in the Classical Tripos of 1880, and immediately afterwards was elected a Fellow of King's. While still holding this fellowship he studied medicine at the London Hospital, taking the M.R.C.S. in 1885, the M.B. soon afterwards, and proceeding M.D. in 1888. During his period of residence at King's he was assistant demonstrator of anatomy in the Cambridge Medical School. At the London Hospital he served as house-physician and house-surgeon.



Sir Cooper Perry's long connexion with the teaching staff of Guy's Hospital began with a demonstratorship in morbid anatomy. He was soon afterwards elected assistant physician, and held office in the medical school as lecturer in materia medica, in dermatology, and in medicine, and he was given charge of the skin department. He was also examiner in materia medica and pharmacology for the University of London, in medicine for the University of Cambridge, and in materia medica and medicine for the English Conjoint Board. His election as F.R.C.P. was in 1894, and he served on the Council of the College in 1913–15. He wrote papers for the *Guy's Hospital Reports* on malignant disease (with Dr. Lauriston Shaw) and on diseases of the duodenum. For many years he combined clinical and teaching work at Guy's with the post of superintendent of the hospital, which gave scope for his great powers of administration, and on retiring from the staff he was elected consulting physician and a governor of the hospital and school. In 1903 he received the honour of knighthood. From 1920 to 1926 he was Principal Officer of the University of London, after serving two years as Vice-Chancellor. On October 20, 1926, the Senate adopted a resolution placing on record its high appreciation of the work he had done for the University.

From 1898 onwards Sir Cooper Perry was closely associated with King Edward's Hospital Fund for London, and he served on its General Council and Management Committee and presided over its Distribution Committee. He had held many other public offices, including membership of the Army Qualifying Board, the Voluntary Hospitals Commission, and the Departmental Committee on Postgraduate Medical Education in London, and chairmanship of the London School of Hygiene and Tropical Medicine, of the Chartered Society of Massage and Medical Gymnastics, and, after his retirement to Worthing, of the local hospital. He had also been chairman of the

Army Hospitals Commission and a governor of Holloway College. In 1927 he went to Egypt to reorganize the work of the Faculty of Medicine in the Egyptian University at Cairo, and remained there for some time as director. He was created G.C.V.O. in 1935.

Mr. H. L. Eason, C.B., C.M.G., Principal and late Vice-Chancellor of the University of London, sends the following appreciation:

"Nihil quod tetigit non ornavit" is, I think, the best epitaph for Sir Cooper Perry. He would have made an ideal Civil Servant. A classical scholar, a musician, a great physician and pathologist, an administrator of unusual quality, in all spheres of his activity he did not much care who got the credit for anything done so long as it was done, usually by him. Those who worked with him behind the scenes knew his value, his massive intellect, and his constructive capacity. The outside world knew him hardly at all. This was due to a peculiar combination of intense shyness and a justifiable vanity. He hated public speaking, and in his hospital days was so nervous about giving a lecture to students that he never slept the previous night. When he did lecture he did so with his eyes on the ground in manifest discomfort. His shyness led him to hide behind a certain brusqueness of manner which was not always appreciated by his acquaintances. Those who got behind this screen soon found that he was intensely human, kind-hearted, and sensitive. He was extraordinarily fair-minded and just, and would make allowances for everything but mental dishonesty. Moral delinquencies he could forgive, but anyone who prostituted his intellectual gifts to base purposes or was tortuous in his mental dealings passed into the limbo of outer darkness so far as he was concerned.

In the world of medicine he was the last of the great succession of morbid anatomists at Guy's Hospital. His manual skill in conducting a necropsy was perfect, and his knowledge of morbid anatomy encyclopaedic. His bedside teaching was extremely effective, owing to his grasp of both clinical knowledge and morbid anatomy, and to be his house officer was the delight of generations of Guy's men. In the world of music his important achievement was the revision, in conjunction with Dr. A. H. Mann, of the Anthem Book in use at King's College, Cambridge, and throughout his life he was a devotee of the more formal and classical music. It was in administration, however, that he made his mark. Coming to Guy's Hospital from the London Hospital in the early nineties of the last century, he found that it had been asleep for thirty years. He reorganized its constitution, its administration, and its finances, and for the twenty-eight years that he was its superintendent it flourished as a happy institution free from acute financial anxiety. He reorganized the Army Medical Service after the South African War and was responsible for the building of the present Army Medical College at Millbank. He was for many years on the council of King Edward's Hospital Fund for London and the chairman of its Distribution Committee. In this capacity his profound knowledge of hospital administration and his understanding of the peculiar problem of teaching hospitals were invaluable.

He had a mastery of concise and lucid English prose. He was a firm believer in that precept of Quintilian's that "Care should be taken not that the reader may understand if he will, but that he must understand, whether he will or not." It was this passion for accuracy that led some people to think that he was fussy over verbal corrections. As a matter of fact he never corrected a document that he did not improve. A few words changed, a sentence reconstructed, and the memorandum was at once on a higher plane. When he himself was in doubt as to the clarity of a sentence he had the habit of translating it into Latin and then back again into English. If he could get the sense clearly in Latin it must be clear and he was satisfied.

Women either admired him or disliked him intensely. There was no middle course for them. He had a habit of paying back-handed compliments that did not make for feminine appreciation. Those who realized his great human qualities behind the lack of social graces were his devoted friends for life, and he in turn repaid their devotion with countless kindnesses. In his form he was bulky and ungainly. No one seeing him at any time in the last forty years would ever have imagined that he had played the wall game at Eton. He never walked if he could take a cab, and in his later years physical exercise was unknown to him.

His success as an administrator was due to the fact that he always had a constructive policy of his own for every problem. He had a contempt for the destructive critic who had no constructive ideas. As a committeeman one found that he had always read the minutes of the previous meeting and had corrections to make if necessary. He had always read his agenda and had his own ideas as to the action to be taken; and, finally, he had his own ideas committed to writing in the form of a resolution. A man who does this nearly always carries a committee with him, especially when his ideas are both well-considered and original. Resembling the late Lord Salisbury in his face and figure, he in his mind also resembled an Elizabethan statesman such as Cecil. Weighty, wise, deliberate in judgment, knowing just when to wait and watch and when to take decisive action, he would have been a worthy member of Queen Elizabeth's famous Councils of State. He could draft a document that could be subtle without deceit and uncompromising yet courteous.

He lived his life as he wished it. Regardless of money or public applause or preferment, he chose the reality of power and influence rather than the trappings of publicity, and he used his incomparable mental gifts entirely to the public good. He well deserved one of his favourite epitaphs—"Inservivit saeculo suo."

Many will have heard with deep regret of the death of HUGH DAVIES-COLLEY, O.B.E., M.B., F.R.C.S., who has been responsible for much of the surgical work of the Aldershot Command since 1915. The spirit of surgery coursed in his veins, for he was the son of a famous Guy's surgeon, and his mother was the daughter of a former treasurer of Guy's. The family record is a most illustrious one, for not only have his father and younger brother held posts of high honour on the surgical staff of Guy's, but each has also served the Royal College of Surgeons of England in several distinguished capacities. His sister, who herself predeceased him, was a famous woman surgeon and was on the surgical staff of several hospitals in London. Educated at Westminster and Trinity College, Cambridge, Hugh Davies-Colley received his clinical education at Guy's. He obtained the Fellowship of the Royal College of Surgeons in 1904, but it was the European war that really discovered him as a surgeon. Davies-Colley was appointed to the staff of the Cambridge Military Hospital, Aldershot, at a time when Sir Arbuthnot Lane was organizing the medical and surgical arrangements of the Command; at first the genito-urinary department was allotted to him, and to many his name will conjure up memories of a kindly, indefatigable, and in those days bearded surgeon wandering through the long corridor at any hour of the day or night armed with his "periscope." He ultimately became the chief surgeon

to the Cambridge Hospital, and held this position until his death. He had a most lovable disposition; his temper was never known to be ruffled; I do not believe that he had an enemy in the world. It was indeed fitting that his coffin should have been borne on other men's shoulders from the hospital to which he had given his best for nearly a quarter of a century.—G. G.-T.

The death of Dr. JOHN WHEELER CLEVELAND, J.P., of St. Albans, on November 11, at the age of 61, removed one who had been conspicuous for his work in various spheres of public service; it brought sorrow to a large circle of his medical colleagues. Born at Havant in Hampshire, he was educated at Charterhouse and St. Bartholomew's Hospital. Having taken the diplomas M.R.C.S., L.R.C.P. in 1904, he was assistant house-surgeon at the Royal Berkshire Hospital, Reading, and then resident anaesthetist and house-surgeon. He began to practise in St. Albans in 1906, where he continued at work until his death, apart from a period of war-time service, during which he was at first resident surgeon officer at the King George Military Hospital for Officers, and later medical officer in charge of the Endsleigh Palace Hospital for Officers. In 1919 Dr. Cleveland was appointed to the medical staff of St. Albans Hospital, and ultimately became honorary consultant surgeon and a member of the House Committee. He was one of the founders of the St. Albans Division of the St. John Ambulance Brigade, and its surgeon. He was appointed an Associate of the Order of St. John in 1923, and three years later was promoted to the rank of Officer of the Order in view of his great services. For nearly sixteen years he was a member of St. Albans City Council, and was mayor of the city in 1922–3; he was also active in support of the Nursing Association and the British Legion. He was a prominent Freemason: W.M. of the Halsey Lodge in 1928, and a Past Provincial Grand Deacon of Herts, in both the Craft and the Royal Arch Degrees. A keen Conservative, he was for many years a member of the executive council of the divisional association, and chairman of the East Ward Association. He captained the Verulam Golf Club in 1922, and had presided over the St. Albans Cricket Club. He was a strong supporter also of the St. Albans Football Club, and its honorary surgeon.

Dr. GRANT ROSS GRIBBEN, formerly a member of the Trinidad Medical Service, died at Brummana, Lebanon, on November 19, and was buried at Beirut in the Anglo-American cemetery. A student of Glasgow University, he graduated M.B., Ch.B.Glasg. in 1924, and afterwards took the D.T.M. Liverpool. Dr. Gribben during his period of service in Trinidad was medical officer of health for Brighton-la Brea rural sanitary district and port medical officer. He was elected a member of the British Medical Association by the Glasgow and West of Scotland Branch immediately after graduation, and five years ago he read to the Trinidad and Tobago Branch a paper on mass treatment with plasmoquine, which was fully reported in the *British Medical Journal* of November 18, 1933.

Dr. WILLIAM FOSTER, medical officer of health under the Shipley Urban District Council for thirty-four years, died at his home on November 27 at the age of 83. The son of Dr. John Foster of Bradford, he was educated at Bradford Grammar School, Epsom College, and the University of Cambridge, taking the clinical part of his course at the Leeds Medical School. He obtained the M.R.C.S. and L.S.A. diplomas in 1879, the Cambridge M.B. in 1885, and the D.P.H. in 1892. After working as house-physician and resident medical officer at the Bradford Royal Infirmary Dr. Foster travelled to Australia, South Africa, and America as a ship surgeon. He began practice at Shipley in 1885, and was appointed medical officer in 1895 and school medical officer in 1906. He acted for some time as medical superintendent of the child welfare centre and consulting surgeon to Sir Titus Salt's Hospital. He had been a member of the British Medical Association for thirty-five years at the time of his retirement from active work in 1929.

Dr. JOHN H. FARDON, a well-known practitioner of Birkenhead, died at Oxton, Birkenhead, on November 28, 1938, at the age of 75. After qualifying M.R.C.S., L.R.C.P., he became demonstrator in anatomy at Bristol University, which position served him in good stead for his future career as a surgeon and general practitioner. He later held resident posts in the Liverpool hospitals and began general practice in Birkenhead in 1894, in which town he remained in active practice until the day of his death. He was appointed honorary surgeon at the Birkenhead General Hospital, then called the Borough Hospital, in 1902, giving his time and skill unstintingly until 1926, when he became a consultant surgeon. During the late war Dr. Fardon, besides doing his work at the hospital and in general practice, was medical officer to one of the larger school military hospitals in Birkenhead, and it is on record that he only missed meeting four of the ambulance trains arriving day and night during the whole of the war years. For this excellent work he was awarded the M.B.E. He had been a member of the British Medical Association since 1896. A colleague, "E. L. M.," writes: Dr. Fardon was a most enthusiastic worker for the British Red Cross, in which Society he took a tremendous interest and was for many years an examiner and instructor in the Birkenhead area. He was a man of high standing in his profession, conscientious, keen, and kindly, although of a retiring disposition. He was greatly esteemed and looked up to by his younger colleagues, who recognized his experience and that he was one of the real old type of general practitioners—fast fading away. Beloved by his patients, he will be greatly missed by all, and our united sympathies are extended to his wife and daughter.

Dr. CUTHBERT BRACEY DALE, who died on December 9 at Weston-sub-Edge, Gloucestershire, had practised for many years at Edgbaston, where he had been born in 1870. A student of St. Bartholomew's Hospital, he qualified as M.R.C.S., L.R.C.P. in 1891, and after serving as house-surgeon at Bart's and at the Bucks General Infirmary, Aylesbury, he was for two years clinical assistant to the Royal Eye Hospital, South London. While in general practice at Edgbaston he was certifying factory surgeon for East Birmingham, and for some time anaesthetist to the Birmingham Ear and Throat Hospital and to the Birmingham School Clinic. Dr. Dale was a member of the Midland Medical Society, and joined the British Medical Association in 1901.

On December 14 EDWARD PHILIP, M.B., C.M., died suddenly at his home in Roehampton Lane, London, S.W., aged 67. The son of William Philip, shipmaster, he had his medical training at Aberdeen University, where he graduated in 1893. At an early age he started practice in a working-class district of South-West London, and his admirable professional abilities soon resulted in constant overwork. As time went on his reputation grew steadily and rapidly, and he was able to move into Redcliffe Gardens, where he practised for many years. Without making any pretensions to academic distinction, Philip had those qualities of observation, judgment, and sympathy which not merely made him deservedly successful but ensured also the affection of his patients. Some few years ago his health began to arouse anxiety—quite probably caused by the severe strain of his early days in practice, when he was accustomed to attend 200 midwifery cases a year at microscopic fees (or none at all)—and about six years ago he retired, settling ultimately opposite the gates of Roehampton Club. Philip was a man of real and unostentatious piety; he was a storehouse of amusing anecdotes, mainly Rabelaisian; and he had hosts of devoted friends among his professional colleagues, in his practice, and in the world at large. His

wife died several years ago, and he is survived by two sons and two daughters. He joined the British Medical Association in 1907, but never took office, though he was keenly interested in its affairs.

Dr. ALEXANDER MACALISTER, Walt Whitman's physician and friend, and one of the first in America to use diphtheria antitoxin, died at Camden, New Jersey, on November 22, aged 77.

JORGEN PETER MULLER, originator of the Muller system of home gymnastics and for many years principal of the Muller Institute in London, died at Aarhus, Denmark, on November 17, at the age of 73.

Medico-Legal

A HERBALIST ACQUITTED

A case tried before Mr. Justice Croom-Johnson at the Manchester Assizes at the end of November* raised some interesting points concerning unqualified practice.

Trial at Manchester Assizes

A "consulting herbalist" named Thomas Hugh Wilbraham was charged with the manslaughter of a youth of 22, whose father had put him under Wilbraham's care for diabetes. Mr. J. G. Lynskey, K.C., prosecuting, said that Wilbraham represented himself as being skilled to deal with the disease of diabetes, but had not shown the necessary skill or used the necessary care, with the result that the boy had died on September 5. In March, 1937, the boy's father had noticed that he was drinking much water and becoming drowsy. The father consulted a doctor, who diagnosed serious diabetes and sent the boy to Dr. Norman Kletz, who tried a diet for two or three weeks and then decided that the boy required insulin injections. Unfortunately, before that treatment was undertaken the father had heard that insulin was not a cure for diabetes but only a stabilizer, and got the impression that diabetes could be cured by a herbalist or osteopath. For a time he placed his son under the treatment of a woman herbalist, but in November, 1937, he went to Wilbraham. The accused, said counsel, told him that he specialized in the treatment of diabetes, had had successful results with other patients, strongly disapproved of the use of insulin, and included in his treatment the use of herbal medicine which caused the pancreas to function again. He was confident he could cure the boy. His charges were 10s. a visit. He did not prescribe any special diet except that the boy should restrict himself as much as possible to green vegetables. He began treatment in January, and in August the boy again broke down, became weak in his legs, and was terribly thin. Wilbraham, however, said he was very pleased with his condition, and that he was giving "pancreatic juices" in the medicine. Later he said that the sugar was down 1¼ points. In September the boy could not stand, and his father asked Wilbraham by telephone whether he should get a doctor. The accused replied that he did not think it necessary. Next day he came to see the boy at the request of the father and said that the sugar was less, that there was not much chance of coma, that the boy was suffering from a poisoned stomach, and that he would give him medicine to put him right. Next morning the boy was worse, and he died in hospital next day.

In cross-examination by Mr. E. J. Hemmerde, K.C., the father admitted that he would not have accepted Wilbraham's treatment along with insulin, but he denied that Wilbraham had suggested insulin. Re-examined, he said that two doctors had advised the use of insulin, but he had not followed their advice because a friend gave him a paper which said that diabetes could be prevented and cured if it had not progressed too far, provided the patient had not taken too much insulin.

Dr. Patrick Fay said that he had seen the boy in March, 1937, and that on April 23 he had stressed the need for insulin. Dr. Kletz said that in this case it was probable that without insulin life would have been materially shortened. Dr. W. H. Grace, the pathologist who made the necropsy, expressed the opinion that if the boy had started to take insulin in January he would now be living a normal active life.

Wilbraham, giving evidence on his own behalf, not only denied having neglected to give insulin, but said that the use of insulin with his treatment was definitely helpful in some cases and essential in others. He asked his diabetic patients to get insulin prescribed by a doctor. He was not allowed by law to prescribe or use insulin. Some of his present patients were using insulin under doctors' directions. In August he had told the father and the son that the son must have insulin. The son said he did not want it and the father said he could not have it. Later he said to the father, "Without the use of insulin I am afraid you are going to make a terrible mistake." The father walked out of the place in disgust. Wilbraham told him that he must call in a doctor right away, and that if he did not Wilbraham would send one. The father replied that he did not care for the doctors round there; he had had some trouble with them before. From first to last, said Wilbraham, he treated the boy according to the knowledge he had, and did everything he could to help him. If he had been allowed to use insulin he would have compelled the boy to have it. The death was accelerated by the failure to give insulin.

The judge, in summing up, warned the jury that they were not trying the question whether treatment by registered medical practitioners according to ordinary practice was better or worse than treatment by herbal medicine. The question was whether Wilbraham had advised or failed to advise insulin, or had advised against its use. The jury found him not guilty and he was discharged.

* *Manchester Guardian*, November 30 and December 1.

The Services

DEATHS IN THE SERVICES

Surgeon Commander ALFRED THOMAS GAILLETON, R.N. (ret.), died at Valparaiso on November 29. He was educated at Edinburgh University, where he graduated M.B., Ch.B. in 1898. He entered the navy soon after qualifying, became surgeon commander on August 10, 1915, and retired after the war. After his retirement he took the D.P.H. at Cambridge in 1923. He served in the war of 1914–18, receiving the medals.

Major-General JOHN JOSEPH GERRARD, C.B., C.M.G., late R.A.M.C., died in London, from the effects of an accident, on December 14, aged 71. He was born in Dublin on October 22, 1867, and was educated at St. Augustine's College, Ramsgate, and at Trinity College, Dublin, where he graduated M.B., B.Ch., B.A.O. in 1888. He entered the Army as surgeon captain on July 23, 1891, and was specially promoted to surgeon major for services in the Tirah Campaign on May 20, 1898. Incidentally he was the last officer promoted to surgeon major before the grant of the military titles. He became lieutenant-colonel on July 28, 1906, colonel in the long list of war promotions on March 1, 1915, and major-general on January 24, 1918, and retired on January 27, 1922. He served on the North-West Frontier of India in the Tirah Campaign of 1897–8, when he was mentioned in dispatches in the *London Gazette* of April 5, 1898, received the frontier medal with two clasps, and was specially promoted to surgeon major; in the South African War from 1899 to 1902, when he took part in the action at Colenso and in the relief of Ladysmith, and in operations in the Orange River Colony and the Transvaal, and received the Queen's medal with three clasps and the King's medal with two clasps; and throughout the war of 1914–18, when he held various administrative appointments at the fronts in Flanders and France, was mentioned in dispatches in the *London Gazette* of June 15, 1916, January 4, 1917, and May 29, 1917. He received the C.B.

in 1917 and the C.M.G. in 1919. After the war he was principal medical officer in Ireland from 1920 to 1922, during the Sinn Fein rebellion. He was appointed Honorary Physician to the King in 1920. In 1898 he married Miss Mabel Repton, who survives him with two sons and two daughters. His eldest and third sons were killed in action in 1918.

Lieutenant-Colonel SIDNEY ARTHUR WILKINSON, chief medical officer of the Bombay, Baroda, and Central India Railway, lost his life on November 26 after a railway accident at Barwani on that line. Apparently no one was injured in the accident itself; some carriages were derailed and Colonel Wilkinson had got out of his carriage and was walking along the line to see if there were any casualties when he suddenly collapsed and died of heart failure. He was educated at St. Thomas's Hospital and took the M.R.C.S., L.R.C.P. in 1914, and subsequently, when on leave in England, the D.T.M. at Liverpool in 1927, and the D.T.H. in 1928. After acting as house-surgeon at Wolverhampton Hospital he entered the service of the Bombay, Baroda, and Central India Railway and had risen to be its chief medical officer. He took a commission in the Indian Railway Volunteers on May 1, 1915, subsequently joining the Indian Auxiliary Force Medical Corps, in which he held the rank of major from May 1, 1927, and recently reached the rank of lieutenant-colonel. At the time of his death he was expecting to go home soon on furlough. He had been a member of the British Medical Association since 1919. He leaves a widow and daughter, who were in Bombay when he died.

Lieutenant-Colonel FREDERICK DURAND STIRLING FAYRER, I.M.S. (ret.), died at Eastbourne on December 2, aged 69. He was born on October 28, 1869, the fifth son of the late Sir Joseph Fayrer, Bt., K.C.S.I., President of the Medical Board, India Office, for over twenty years—1873 to 1895. He was educated at Cambridge University, where he graduated B.A. in 1891 and proceeded M.A. in 1894, and at Charing Cross Hospital, and took the M.R.C.S., L.R.C.P. in 1896. He entered the Indian Medical Service as surgeon lieutenant on January 29, 1898, became lieutenant-colonel after twenty years' service, and retired on April 8, 1925. He served in the war of 1914–18, on the North-West Frontier of India in 1914–15, in the Tochi Valley. He had been a member of the British Medical Association since 1901.

Universities and Colleges

UNIVERSITY OF OXFORD

The following medical degrees were conferred in Congregation on December 10:

D.M.—D. G. Ferriman, H. R. Bathurst-Norman.

B.M.—E. M. Poulton, J. Scholefield, L. G. C. E. Pugh, R. G. W. Ollerenshaw, C. D. Cormac, E. L. James, J. C. G. Abraham, E. H. Hiley.

UNIVERSITY OF CAMBRIDGE

At a Congregation held on December 9 the following medical degrees were conferred:

M.D.—W. A. Elliott, A. K. Monro, L. C. Cook.

M.B., B.CHIR.—*A. W. Bone, *G. V. Steward, K. E. Bond, A. Winder, A. H. Masina, R. S. Saxton.

M.B.—*F. H. Masina, A. H. Gurney.

* By proxy.

UNIVERSITY OF LONDON

At a meeting of the Senate, held on December 14, the Graham Scholarship in Pathology was awarded to R. M. Calder, M.B., Ch.B.

Dr. H. E. A. Boldero has been appointed as one of the representatives of the General Medical Schools on the Senate for the remainder of the period 1938–42 in succession to the late Professor Leonard S. Dudgeon.

The Royal Hospital, Wolverhampton, has been approved for three years as from October, 1937, for the purposes of the External Diploma in Clinical Pathology.

Foundation Day was celebrated on November 24, when the Chancellor, the Earl of Athlone, F.R.S., held a reception at Senate House. Graduates who had obtained degrees since May were presented to the Chancellor.

The following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—‡T. B. Griffiths, ‖L. J. Honeywill (University Medal), *M. E. MacGregor, ‖C. M. Miller, †C. S. Smith, *R. B. Terry, *Margaret D. Thomas, ‖Mary E. E. Ward, B. S. S. Acharya, A. G. Apley, J. R. Ascott, Romana G. Bartelot, D. McN. Beaugié, R. D. Blachford, Natalia S. Blumenfeld, D. J. A. Brown, K. C. Brown, Margaret M. Burton, W. E. Clarke, J. C. A. L. Colenbrander, Dorothy L. Crossley, E. R. Dansie, D. A. Davies, Joan M. St. V. Davies, A. S. Dods, A. M. Edwards, J. A. C. Edwards, Phyllis M. Edwards, B. H. Ellis, D. G. Evans, J. A. P. Evans, C. C. Evill, C. G. Fagg, B. R. Fink, D. S. Foster, H. Foster, J. P. Fox, D. F. Freebody, Ysobel M. Garland, Margaret F. Gillison, Janet D. Gimson, H. M. Goldberg, Jean E. Grant, L. J. Grant, S. I. Green, C. L. Greenbury, W. S. Hacon, J. A. G. Hair, M. Halberstaedter, N. W. A. Harvey, Doreen Jamieson, S. M. Jenner, A. Jordan, J. B. Kinmonth, C. C. Kirby, G. S. A. Knowles, G. Kruatrachue, A. S. Lee, D. R. Levinson, C. V. Lewis, A. W. Little, K. N. Lloyd, M. Lubran, Margaret E. McLaughlin, R. J. H. McMahon, D. E. Macrae, Elizabeth C. Marshall, H. A. C. Mason, S. W. Maxwell, Mary D. Mellersh, P. S. Meyrick, G. D. N. Milne, Elizabeth M. Mitchell, J. D. N. Nabarro, Gladys L. Neill, C. S. Nicol, A. J. Nimmo, D. E. Parry, Edith A. S. Parry-Evans, T. Partington, K. G. Pascall, Ruth Penlon Jones, Gloria H. Platt, S. S. F. Pooley, D. W. Pugh, Elisabeth C. Randell, W. J. Rees, Nora Reid, Nancy E. G. Richardson, R. B. K. Rickford, A. C. Ricks, A. T. M. Roberts, L. F. W. Salmon, D. K. Sambrook, C. R. Savage, W. J. Shannon, P. Shemilt, G. Shneerson, M. M. Shrinagesh, J. R. Simpson, J. H. Smart, Margaret D. Snelling, G. R. Staley, Margaret M. Strange, Mary R. Thompson, L. C. Thomson, K. B. Thornton, J. Todd, Betty Walker, J. W. B. Waring, C. P. Warren, W. R. W. West-Watson, M. H. G. White, J. H. Whittles, R. F. Wyatt, G. Wynn Williams, R. O. Yerbury. *Part 1:* H. Auger, Diana E. Barbour, Patience E. Barclay, Rosalind S. Barclay, G. A. Beck, Mary B. Bensusan-Butt, H. E. Bentley, A. C. Bingold, R. A. Blair, Elizabeth Broadhead, T. H. W. Clarke, J. V. Davies, M. E. Davies, A. R. Dearlove, W. Donkin, Jean M. Drury-White, Jean L. Edwards, R. G. Evans, Edith I. Fettes, E. L. Fränkel, P. Fränkel, J. M. French, Kathleen M. French, L. V. Gimson, G. L. Haine, V. W. J. Hetreed, C. A. Jackson, G. M. Killpack, R. A. King, P. D. C. Kinmont, Dorothy M. S. Knott, Joan V. Laughlin, G. D. Lumb, L. Nancekievill, S. Oram, A. S. Oscier, D. J. Paddison, G. A. Robinson, R. G. Robinson, A. F. Russell, R. W. B. Scutt, Eva G. Seaton, Margaret M. Shrubsall, Joyce R. Simmons, F. M. S. Smith, T. D. Spencer, B. E. C. Stanley, W. M. Stephens, Katharine W. Stuart, W. F. T. Tatlow, Norah G. Taylor, J. Ll. Temple, Elsie M. Terry, R. D. Tonkin, Elizabeth Topley, F. G. Tucker, A. J. Walker, A. F. Wallace, M. Watkins, Alice Yates. *Group 1:* L. D. Arden, R. H. Barrett, Mary Brandon-Jones, G. L. Burgess, J. Burton, Mercy S. Cam, H. B. O. Cardew, C. D. Chilton, H. D. Cockburn, G. P. Crean, T. T. Davies, J. J. Davis, Ursula M. Dick, J. E. Dickson, C. J. Evans, W. K. Frewen, P. A. Gardiner, Beryl M. Gee, J. Henry, R. N. Houlding, Barbara J. Hussey, M. T. I. Jones, R. R. McSwiney, F. P. S. Malone-Barrett, H. Matthews, A. Miller, H. E. Moody, Rosie Morris, R. E. Newman, Sylvia D. Orchard, J. F. Perredes, G. L. Pett, A. S. Porter, J. Sondheimer, Susan M. Tracy, Joan Wagstaff. *Group II:* R. Asquith, J. C. Ballantyne, P. B. Banaji, Ailsa Bannerman, D. A. G. Brown, Amelia E. Burch, J. A. Burnett, Diana M. M. Carr, Phoebe Charlton, D. Ll. Davies, D. M. Dunn, P. S. Fuller, L. Goodman, S. Grossmark, J. Herbert-Burns, A. P. Hick, J. D. O'D. Lavertine, Dorothy K. Paterson, M. Radzan, S. B. Smith, P. D. Swinstead, J. Watkins-Pitchford, N. A. F. Young.

* Distinguished in medicine. † Distinguished in forensic medicine and hygiene. ‡ Distinguished in surgery. ‖ Distinguished in obstetrics and gynaecology.

KING'S COLLEGE HOSPITAL

The Committee of Management of King's College Hospital has decided that one of the medical registrars shall be resident and has appointed R. B. Niven, B.M., B.Ch., to hold the office from January 1, 1939. To another medical registrarship has been given the name of Sir Raymond Crawfurd, a former dean of the medical school and senior physician to the hospital, and G. A. Kiloh, M.B., B.S., has been appointed first holder of the office. G. R. Steed, M.B., B.S., has been appointed to the Sambrooke Medical Registrarship, founded in 1866 by a lay member of the committee of management.

UNIVERSITY OF BRISTOL

The following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—[1 2 3] J. F. Ackroyd, E. M. Barber, C. B. Jones, M. M. Lewis, Jane Mackintosh, [3 4] Joan E. Mackworth, P. C. C. Phelps, Sybil M. Williams. *In Group II (completing examination):* J. S. Richardson. *Section 1 :* [5] Ruth Appleby, Dorothy M. Ayre, D. L. Bayley, [5] D. C. Bodenham, Jean A. Butt, Mary Crago, [5] J. N. P. Davies, [5] Marjorie O. Dunster, [5] J. L. Elliott, J. L. Emery, Sara M. Field-Richards, E. M. Grace, [5] Betty F. Hannaford, F. R. Hurford, Rosemary W. Knowles, N. E. Melling, [5 6] C. A. St. Hill, [5] Jeannette Shed, [5] Dorothy M. Shotton,

P. R. H. Slade, A. R. Stonehill (formerly Steinberg), [5] Edith M. Wagstaff, [5] T. H. White.

[1] Second-class honours. [2] Distinction in surgery. [3] Distinction in public health. [4] Distinction in forensic medicine and toxicology. [5] Distinction in materia medica, pharmacy, pharmacology, pharmaco-therapeutics, and toxicology. [6] Distinction in pathology and bacteriology.

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examinations indicated:

M.D.—W. Dodd, F. R. Edwards, R. L. Hartley, A. J. Helfet, L. Henry, K. Jilani, J. C. Twomey, O. Walker.

M.CH.ORTH.—S. R. Chandra, E. W. Knowles, W. R. D. Mitchell, G. C. Sen, G. M. Sleggs, J. V. Todd.

FINAL M.B., CH.B.—*Part I:* W. F. Christian, J. Collins, D. W. Ellis-Jones, A. H. Hands, Mrs. C. W. L. Harries, M. P. Jones, Joan Macara, S. B. Nelles, P. P. Newman, Margaret E. Parry-Edwards, C. W. R. Roseby, Beryl M. Smith, R. H. M. Stewart, P. G. W. Sutton, Hilda Walker. *Pharmacology and General Therapeutics:* G. J. C. Brittain, W. Rotheram. *Part II:* S. Ellenbogen, H. Hall, J. S. Hindley, R. R. Knowles, R. J. Parry, Kathleen Pugh-Jones, H. J. Shuttleworth, H. J. H. Soulby, G. O. Thomas, Joan P. Thomson, A. G. Williams. *Part III:* E. J. Bowmer, H. Buckley, J. L. Chisnall, W. H. R. Cook, D. J. Doherty, O. M. Haarburger, S. Hen, A. L. T. Hutson, Iola L. T. Jones, G. Karstaedt, Helen Kay, G. L. Manson, J. M. Marchant, S. Newman, J. L. Patton, G. I. Roberts, G. R. Thorpe, G. C. Tweedie.

DIPLOMA IN TROPICAL MEDICINE.—A. S. Affara, B. Basu, S. J. Campbell, L. J. Charles, S. K. Chatterjee, S. G. Cowper, S. Garnjana-Goonchorn, C. Haddad (recommended for Milne Medal), M. N. Hwang, B. S. Jaiswal, H. N. Lee, D. V. Oka, I. S. Parboosingh, H. R. R. E. Ramesar, S. H. Segerman, A. H. D. S. de Silva, G. C. Watt.

UNIVERSITY OF MANCHESTER

The following candidates have been approved at the examination indicated:

FINAL M.B., Ch.B.—Muriel I. R. ApThomas, H. B. Austin, K. Harrison, R. B. Hollos, P. N. Holmes, D. N. Kiff, Jean Mason, J. Meynell, Mary B. Oakden, Lilian P. Parry, T. B. Whitehead, E. J. Yates. *Part I:* Peggy Anderson, G. T. Ashley, J. G. Atherton, T. G. Barlow, E. F. Burndred, J. H. Gifford, C. Hamwee, E. Lee, D. Livshin, A. S. Ogden, W. E. Rigby, Barbara M. Statham, W. P. Sweetman.

THIRD M.B., Ch.B.—*Pathology and Bacteriology:* Eva Abrahamson, A. Ashworth, J. H. R. Barker, F. R. Brebner-Smith, T. Brittain, I. C. Campbell, G. Caplan, Rachel Claiman, Hilary J. Crewe, W. Dickson, H. Diggles, G. R. Ferguson, J. G. Ferguson, E. S. Frazer, R. J. Gampell, J. Gregory, Hilda R. Harris, H. Hassall, S. Haythornthwaite, B. L. Hoffmann, Irene E. Howorth, Margaret Jacques, O. Janus, P. W. Kippax, G. Lancaster, J. T. A. Lloyd, J. L. Maclean, W. Mellor, Elsie L. Mettam, Catherine E. D. Nash, C. Parish, K. C. Prausnitz, T. F. Redman, F. Robinson, Margaret H. Roscoe, J. C. Seddon, G. K. Spruell, J. K. Steward, T. A. Taylor, Edith M. Thorp, A. L. Tulk, Ena M. Walmsley, Elizabeth C. S. Williams, Joyce Worthington. *Pharmacology:* E. P. Abson, R. G. Balf, J. Ball, J. K. Brown, E. A. Cachia, B. O. Dowdell, B. I. Eames, E. Feinmann, A. Glass, E. Greenwood, J. C. Greenwood, P. G. Griffiths, E. G. Hall, Frances A. Hepburn, S. H. Jackson, R. P. Jepson, H. Khazam, M. Levinson, D. C. Little, J. K. McMyn, F. S. Mooney, A. B. Morrison, T. E. Parry, S. S. Rose, Susanne M. Seligsohn, G. J. Shanklin, H. G. B. Slack, J. Thompson, Vera Waine, *A. E. Wall, F. R. Wilde, *L. Wise, B. Wolman.

* With distinction.

UNIVERSITY OF ABERDEEN

At a graduation held on December 14 the following medical degrees were conferred:

M.D.—*A. Grant, †J. A. Cardno, †H. D. Chambers, H. S. Fraser, W. R. Gauld.

M.B., CH.B.—L. C. Allan, Margaret P. Allan, J. Anderson, S. C. Anderson, J. Caie, W. Cockburn, N. J. H. Davidson, L. G. Eddey, W. J. Finnie, F. D. Forbes, W. L. Gordon, N. L. Hulse, Marion MacLeod, D. G. McRobbie, D. Matheson, H. K. Paterson, M. MacR. Paterson, L. G. Tulloch, J. Walker, Margaret J. Walker, Elizabeth A. White, J. Wylie.

* With honours. † With commendation.

UNIVERSITY OF EDINBURGH

A graduation ceremonial was held in the Upper Library Hall on December 16, when the following degrees were conferred:

M.D.—D. M. Anderson, W. G. Annan (*in absentia*), ‡A. F. M. Barron, H. E. Collier, ‡I. Douglas-Wilson, F. O. Graham, ‡C. L. Grant, †G. M. Greig, J. Hutton, ‡J. S. Lawrence, *Agnes R. Macgregor, ‡F. M'L. Richardson, Major, R.A.M.C., J. Ronald, A. G. H. Smart (*in absentia*).

M.B., Ch.B.—M. A. Ayoub, J. McK. Bertram, A. G. Brown, Fanny B. Chisholm (neé Mackintosh), P. S. Clouston, J. H. Comloquoy, S. P. Cornell, W. E. Cowie, H. D. Dobson, R. Dowie, Janet K. O. Duff, W. Finlayson, W. Forrester, W. A. Glaubman, R. M. Henderson, G. M. Jolly, A. Ketchin, E. H. Lamb, S. Lurie, R. D. M'Intyre, A. MacLeod, J. W. Martin, C. M. Norman-Williams, A. A. F. Nussiebeh, B. M. Omar, J. C. Robertson, S. P. Robson, A. M'I.Runcie, W. S. Russell, Annie D. Savill, F. S. Sedgwick, Ellie Seligman, C. S. Singh, Evelyn M. Stewart, L. N. Stewart, Ida E. Wilkinson, Pak Foo Woo, R. B. Wylde.

* Awarded gold medal for thesis. † Highly commended for thesis. ‡ Commended for thesis.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following medical degrees were conferred on December 3:

M.CH.—R. L. Forsyth, R. G. Taylor.

M.B., B.CH., B.A.O.—M. E. C. Balmer, Miriam A. Becket, J. W. Boland, R. S. MacL. Cooke, H. R. T. Devlin, D. B. George, Emily E. E. E. Hill, J. R. Mahon, J. L. Mans, D. E. Meares, F. G. Millar, J. E. Milne (formerly Murphy), J. R. Murdock, F. W. Parke, W. A. J. Pike, Elizabeth M. Rees, Elizabeth L. J. Ryan, Kathleen E. A. Smith, D. K. Stewart, J. G. Waugh, S. L. Wray.

L.MED., L.CH., and L.A.O.—M. D. M. Bergin.

The following candidates have been approved at the examinations indicated:

FINAL MEDICAL EXAMINATION.—*Part I, Materia Medica and Therapeutics and Pathology and Bacteriology:* †F. G. M. Ross, †C. P. Clancy-Gore, †Maureen C. Johnston, †W. E. O'C. C. Powell, R. M. Halahan, S. O. O. Franklin, M. D. Leitch, M. Steinberg, L. C. Jacobson, Lois J. Macaulay, H. FitzGibbon, Olive S. H. Devlin, J. Nash, F. J. Queally, E. G. R. Butler, H. B. C. Houston, C. F. Ford, F. N. C. Levy, S. D. Reid. *In completion:* Margaret Sutcliffe. *Part II, M.B.:* †J. G. Waugh, †W. Sandford, †J. R. Murdock, †L. S. Levinson, Sylvia M. FitzGerald, M. Herman, Elizabeth L. J. Ryan, Miriam A. Becket, Rosaleen de C. McCormick, W. A. J. Pike, F. G. Millar, W. B. Welply, W. Jones, E. R. F. Mellon, J. W. Boland, F. R. T. Hollins, J. L. Mans, Mary A. Conyngham, D. A. Huggard, Kathleen E. A. Smith, E. R. Coetzee. *B.Ch.:* †Emily E. E. E. Hill, †S. L. Wray, †J. R. Mahon, Miriam A. Becket, F. P. O'Sullivan, J. W. Boland, Elizabeth M. Rees, Kathleen E. A. Smith, M. E. C. Balmer, R. S. MacL. Cooke, H. R. T. Devlin, D. B. George, D. K. Stewart, F. G. Millar, J. L. Mans, J. E. Milne, D. E. Meares, F. W. Parke, M. D. M. Bergin. *B.A.O.:* *M. O'C. Drury, *R. S. W. Baker, †C. J. Du Preez, †E. G. Hobart, †G. S. Sheill, D. L. Harbinson, S. F. H. Haughton, E. N. O. Sodeinde, G. A. Anderson, C. H. Rutherford, M. E. Tapissier, J. P. Gore-Grimes, E. F. Keating, W. M. Winn, Sheila Kenny, Patricia D. Concannon, D. St. B. F. Nunan, Kathleen E. A. Smith, R. Brass, B. Serebro, T. Shier, F. P. O'Sullivan, R. J. Balfe, D. G. Harrison, J. R. A. Martin.

M.D.—R. Bowesman.

* First-class honours. † Second-class honours.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—C. V. Arthur, J. A. Bailey, D. L. P. De Courcy, J. Fergusson, N. A. Jevons, H. Shepherd, W. Simpson, J. W. Weston, C. E. Winterstein.

MEDICINE.—H. J. S. Coldham, R. M. Corker, H. L. Francis, J. B. Gurney Smith, J. A. L. Leeming, R. P. Parkinson, T. G. Viljoen, M. Whitehead.

FORENSIC MEDICINE.—H. J. S. Coldham, R. M. Corker, H. L Francis, J. B. Gurney Smith, J. A. L. Leeming, R. P. Parkinson T. G. Viljoen, M. Whitehead.

MIDWIFERY.—H. J. S. Coldham, M. Becker, M. M. El Garrahy, F. W. Ford, A. J. Fraser Simson, A. Jones, A. B. Taylor.

The diploma of the Society has been granted to M. Becker, R. M. Corker, D. L. P. De Courcy, J. Fergusson, H. L. Francis, N. A. Jevons, R. P. Parkinson, T. G. Viljoen, and J. W. Weston.

BRITISH ASSOCIATION OF RADIOLOGISTS

At the recent examination for the Fellowship of the Association, the following were successful:

*J. E. Bannen, M.B., Ch.B., D.M.R.E., *T. P. Eustace, M.D., D.M.R.E., †P. R. Goodfellow, M.B., B.Ch., D.M.R.E., *S. Nowell, M.B., Ch.B., D.M.R., *R. G. Reid, M.B., Ch.B., D.M.R.E.

* Honours in radiodiagnosis. † Honours in radiotherapeutics.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

At a meeting of the Royal College of Surgeons of Edinburgh held on December 16, with Mr. W. J. Stuart, President, in the chair, the following candidates, having passed the requisite examinations, were admitted Fellows:

J. E. Andrew, M. Arnold, N. B. Betts, H. N. Bhatt, W. Blackwood, C. Bowesman, D. P. Burkitt, R. J. Coto, E. J. Crawford, I. W. Davidson, K. S. Fitch, R. J. Fleming, I. T. Fraser, L. D. B. Frost, J. C. Goligher, T. L. Gordon, P. R. Greeves, A. H. Hall, M. E. S. Harrison, S. H Harrison, J. Kiely, M. V. Kramer, S. L. A. Manuwa, I. G. MacGregor, A. McKenzie, J. C. Nicholson, H. Park, H. Poston, J. F. Riley, W. Simpson, A. J. Slessor, A. L. Som, J. R. St. G. Stead, W. J. Virgin, R. H. H. Williams.

ROYAL AUSTRALASIAN COLLEGE OF PHYSICIANS

On December 15 the Royal Australasian College of Physicians was inaugurated in the Great Hall of Sydney University. The Governor of New South Wales, Lord Wakehurst, attended the ceremony and read a message from the King wishing the College all success. The Royal College of Physicians of London was represented by Dr. H. Morley Fletcher, formerly Senior Censor, who presented an address from the old College to the new, which was printed in the *British Medical Journal* of December 10 (p. 1218). The College was incorporated on April 1, 1938, under the Companies Act of the State of New South Wales as a company limited by guarantee and not having a share capital. The registered office is in Macquarie Street, Sydney. The first President is Sir Charles B. Blackburn (Sydney); the vice-presidents are Dr. C. T. Champion de Crespigny (Adelaide), Professor D. W. Carmalt Jones (Dunedin, N.Z.), and Dr. S. V. Sewell (Melbourne); the censor-in-chief is Dr. S. O. Cowen (Melbourne); the hon. secretary Dr. Allan S. Walker (Sydney), and the hon. treasurer Dr. Stewart Arthur Smith (Sydney). The Foundation Fellows number 247 and the members 39.

Medical Notes in Parliament

The business of the House of Lords this week included the third readings of the Marriage (Scotland) Bill and the Housing (Financial Provisions) (Scotland) Bill.

The House of Commons this week discussed foreign policy, the National Register, and the redistribution of population before adjourning till January 31, when the House will probably go into committee on the Cancer Bill.

During the dinner given by present and past members of the Parliamentary Medical Committee to Dr. Elliot at the House of Commons on December 14, Dr. Elliot recalled that the Committee was founded by Sir Watson Cheyne in 1919 and that he himself had been its honorary secretary from 1920 to 1922, when he was succeeded by Sir Francis Fremantle. Speeches were also made by Sir Francis Fremantle—in the chair—Sir Auckland Geddes, Dr. Somerville Hastings, Dr. O'Donovan, Sir John Worthington, Sir Richard Luce, Dr. Drummond Shiels, and Dr. A. B. Howitt. Lord Dawson was unable to attend owing to indisposition.

Progress of Bills

The Public Health (Coal Mines Refuse) Bill was reported on December 8 from a Standing Committee of the House of Commons.

The Custody of Children (Scotland) Bill and the Pensions Acts (Amendment) Bill were read a second time by the House of Commons on December 10.

On December 15 the House of Lords passed the Expiring Laws Bill.

Dentists' Annual Registration Fee

On December 5 Mr. HOPKIN asked the Minister of Health if his attention had been drawn to the fact that dentists qualifying after 1921 had to pay an annual registration fee of about £4, whereas other dentists had to pay no annual fee; and if, in view of the dissatisfaction among dentists, he would inquire into the whole question. Earl WINTERTON, who replied, said that the Dentists Act, 1921, provided that the payment of the annual fee in question might be required only in the case of dentists registered after the commencement of the Act. This provision, which preserved the rights of those practising dentistry before the Act was passed, gave effect to a recommendation of the Interdepartmental Committee on the Dentists Act, 1878. He was not aware that the provision had caused any general dissatisfaction in the dental profession, and he did not consider that further inquiry was called for.

Workmen's Compensation Bill

In the House of Commons on December 10 the Workmen's Compensation Acts (1925 to 1938) Bill was rejected on second reading. This Bill, introduced by Miss Irene Ward, proposed to deal with compensation claims for miners' nystagmus. Miss Ward explained that it was designed to implement the report of the Stewart Commission. M.P.s for mining constituencies opposed the Bill because they were not satisfied with the system of diagnosis which it proposed. Mr. W. J. STEWART said nystagmus was often not discernible to a medical man when the miner was above ground. Mr. GEOFFREY LLOYD said there was not now much increase in miners' nystagmus. He referred to unsatisfactory arrangements for medical certification.

A.R.P. at Mental Hospitals

On December 13 Mr. BERNAYS, replying to Mr. Sorensen, said that the Minister of Health hoped to issue very shortly a memorandum on the air raid precautions which should be carried out at hospitals, including mental hospitals, in the more vulnerable areas. Information regarding precautions actually being carried out had been utilized in the preparation of the memorandum. The Government was prepared to assist in approved cases towards expenditure on precautions at hospitals, including mental hospitals, which were included in the emergency hospital schemes. No estimate of the total expenditure involved in protecting mental hospitals could be given at present, as the appropriate measures varied widely according to local conditions.

Board of Control for Scotland

In moving the second reading of the Reorganization of Offices (Scotland) Bill in the House of Commons on December 13, Colonel COLVILLE said that the proposals were based on the report of the Committee on Scottish Administration, appointed at the end of 1936. The committee had considered the question of the reorganization of the General Board of Control. It was represented to them by certain witnesses that the intimate relations between physical and mental health made it desirable to abolish the Board altogether and to transfer its functions to the Department of Health. The committee, however, decided that there were special reasons—in particular the necessity for having a separate body with independent and quasi-judicial functions to protect the interests of the insane—which made it desirable to retain the Board. The Government accepted this recommendation. At the same time, they felt that the views expressed by the committee as to the need for strengthening the Board's staff and associating it more closely with the Department of Health were wise.

The existing Board was therefore being reconstituted. It would consist of a paid wholetime chairman, who would be an officer of the Department of Health holding the rank of assistant secretary; the two existing paid medical commissioners; a part-time paid legal commissioner: a representative

of the Scottish Education Office; and two unpaid members representing the general public. The committee took the evidence of several medical men on the question. They had the Scottish Division of the Royal Medico-Psychological Association before them in the person of Professor Henderson and Dr. McAlister. They also had the Board of Control for England and Wales, and heard Sir Hubert Bond as representing the medical interests, and also Dr. Thomson of the Board of Control for Scotland. On balance the Government decided that the advice expressed as to the protection of the interests of the insane by a quasi-judicial body was good, and they had therefore adopted it. It was intended that the functions of the Secretary of State relating to lunacy and mental deficiency should, when the new system became operative, be discharged through the Department of Health, and not through the Scottish Office as at present.

The Bill was read a second time by 157 votes to 99, and committed to a Standing Committee.

Gold Coast Medical Service

In reply to Mr. Cecil Wilson, Mr. MALCOLM MACDONALD said on December 14 that the scale of salary for a European medical officer in the Gold Coast was £660 a year for three years, then £690 a year rising by annual increments of £30 to £840 a year, then, subject to passing an efficiency bar, £880 a year rising by annual increments of £40 to £1,000 a year. The period of probation was three years, and free quarters were provided.

The scale of salary for an African medical officer in the Gold Coast was £500 a year rising by annual increments of £25 to £600 a year, thence, subject to passing an efficiency bar, rising by annual increments of £30 to £720 a year. The period of probation was three years, and free quarters were not provided. While awaiting probationary appointment an African (suitably qualified) might be employed as a junior medical officer in one of the larger hospitals of the Gold Coast for a period of preliminary training, during which he was granted salary at the rate of £400 a year.

At present the higher posts in the medical department of the Gold Coast were normally filled by European officers belonging to the Colonial Medical Service. No appointments were actually reserved for European officers, and in the medical as in the other branches of the Service African officers were fully eligible to be considered on their merits for promotion to any appointments for which they may be qualified.

Bill to Control Sale of Contraceptives

The second reading of the Contraceptives (Regulation) Bill was moved on December 16 by Mr. O. E. SIMMONDS. He said the decline by 54 per cent. in the birth rate of England and Wales between 1880 and 1930 proved that a large section of the community believed it had a moral right to birth control. The Bill dealt not with public morality but with public decency, and circumscribed some of the offences against public opinion committed by those who traded in contraceptives. Such aggressive practices included the nauseating display in shop windows, sale from slot machines, and distribution of alluring literature. Most young people in their 'teens had moral fibre to resist the temptation of this flagrant commercialism, but it was known to have the saddest results in many cases. Youngsters who replied to advertisements by certain physical culture experts received later batches of contraceptive literature. It was reported from an industrial area that factory girls procured contraceptive devices from slot machines and carried them in their handbags. Mr. Simmonds said a similar Bill had previously been introduced in the House of Lords by Lord Dawson and in the Commons by Mr. R. J. Russell. Clause 1 of the present Bill prohibited the display of contraceptives in or outside any shop in a manner visible to persons outside the shop. It also prohibited the sale or hawking of contraceptives in streets and public places or by automatic machines placed to be used by persons in streets or public places. A paragraph prohibited the unsolicited dispatch to persons under 18 years of contraceptives or of circulars and advertisements dealing with them. The Bill did not prevent anyone desiring to purchase contraceptives from having reasonable opportunity of doing so, and it did not deal with the distribution of literature through societies. It did not raise the question of aphrodisiacs or sexual stimulants, nor did it touch abortifacient devices. A committee on abortion was now sitting. If a bottle of olive oil were placed in a window and marked "Olive oil for contraceptive purposes," the vendor would be liable under the Bill, but not if there were no reference to contraception. In industrial areas the problem of the sale of contraceptives was serious. Many varieties of contraceptives could be purchased from slot machines in Birmingham.

Mr. SALT seconded the motion.

Sir WILLIAM WAYLAND moved an amendment declaring that the whole subject of improper commercial exploitation of contraceptive, abortifacient, and aphrodisiac devices should be dealt with by a Bill after publication of the Report of the Departmental Committee on Abortion. Sir William said the reduction in venereal diseases was largely due to the use of contraceptives. Instead of trying to prevent them being sold Parliament should try to teach young people to use them properly.

Sir FRANCIS FREMANTLE moved the closure, but this was refused by the Speaker, and the second reading discussion was adjourned till February 10. Further progress with the Bill this session is improbable.

Children for Adoption: Medical Certificates

Miss HORSBRUGH moved, on December 16, the second reading of the Adoption of Children Bill. She said it was founded on the recommendations of the Departmental Committee, set up by Sir John Simon when Home Secretary, to study the difficulties and the methods pursued in child adoption, particularly when adoptions were arranged by associations or groups of people. She had been chairman of that committee. Legislation passed for England in 1926 and for Scotland in 1930 failed to cover the cases where adopters did not go to the courts for adoption orders and omitted to deal with the third party who arranged the adoption. The Bill would deal with abuses or neglect in these cases. Clause 4 (*c*) dealt with inquiries to be made if adoption were to be successful, and expressed the necessity for obtaining a certificate concerning the child's health. The best adoption societies insisted on having a doctor's certificate, and several societies insisted on a Wassermann test either in the case of the child or the mother, but other societies did not insist on this. Children with venereal disease might be received into a hostel with other children and sent out for adoption as healthy children. Therefore if adoption societies were to be registered this regulation about medical certificates should be insisted upon.

Mr. GEOFFREY LLOYD said the opinion of the Government was that the Bill was very useful.

The Bill was read a second time and sent to a Standing Committee.

Nurses' Emergency Register.—On December 12 Dr. ELLIOT informed Mr. R. Duckworth that one of the main objects of the emergency register of nurses was to secure the services in a national emergency of women with nursing experience no longer practising, who would be a valuable reinforcement to nurses already attached to hospitals and other institutions.

Silicosis among Slate Miners.—Mr. GEOFFREY LLOYD stated on December 15 that an expert medical inquiry carried out a few years ago revealed no evidence of silicosis among slate quarrymen, but the Home Secretary was aware of some evidence pointing to the occurrence of silicosis among slate miners working underground in the Festiniog area.

Milk in Schools.—On March 31, 1938, there were 5,035,506 children on the registers of the public elementary schools in England and Wales. Of these, 2,235,278 were receiving milk on payment at the reduced rate under the milk-in-schools scheme and 457,062 were receiving free milk. Corresponding figures for Scotland are: number of children on the registers

of primary schools, 613,984; number of children receiving milk on payment at the reduced rate under the milk-in-schools scheme, 237,581; children receiving free milk, 62,472. In forty-eight areas in England and Wales, for the most part small, the local education authorities, of which four are in Lancashire, do not exercise their power of providing free milk. In eight of these areas free solid meals are provided.

Approved Societies Benefits.—Dr. Elliot cannot give any undertaking about the introduction of amending legislation to bring uniformity in cash benefits to all members of approved societies and to make dental and ophthalmic benefits available to all these members. He and Mr. Colville recently received a deputation on this subject, which Dr. Elliot describes as highly controversial.

Safety in Mines.—The report of the Royal Commission on Safety in Mines has been signed and submitted to the King. Captain Crookshank hopes that copies will be available for members of the House of Commons in about a fortnight.

Bacterial Content of Pasteurized Milk.—The Milk (Special Designations) Order, 1936, prescribes a maximum bacterial content for pasteurized milk before delivery to the consumer, and Dr. Elliot is advised that the method of counting laid down by the Order is reasonably suitable. It is for the licensing authority under the Order to take steps to secure compliance with the prescribed standard.

Extent of Overcrowding.—The latest reports of the medical officers of health place the number of overcrowded houses at the end of 1937 at 265,000—a reduction of about 77,000 on the figure of the original survey of 1935–6.

Notes in Brief

The Interdepartmental Committee on the Nursing Services is likely to submit an interim report in the very near future.

A scheme for the centralization of health services in Barbados has been drafted by the Board of Health and awaits consideration by the Legislature.

Medical News

A meeting of the Society for the Study of Inebriety will be held at 11, Chandos Street, W., on Tuesday, January 10, at 4 p.m., when Commissioner David C. Lamb, chief of the Intelligence Office of the Salvation Army, will open a discussion on "Inebriety: Some Aspects of the Problem."

Immediately preceding the annual congress of the Ophthalmological Society of the United Kingdom on April 20, 1939, the following meetings will be held at the Royal Society of Medicine, 1, Wimpole Street, London, W.: International Association for the Prevention of Blindness (address, 66, Boulevard Saint-Michel, Paris, VI), on Wednesday, April 19, at 2 p.m., "The Application of the Crédé Method for the Prevention of Ophthalmia Neonatorum in Various Countries." The speakers will be Dr. Sinclair (Edinburgh); Professors Terrien (Paris), V. Szily (Munich), Maggiore (Genoa), Vasquez Barrière (Montevideo); Dr. Wilson (Cairo); Mr. J. D. M. Cardell (London), Dr. C. Berens (New York). International Organization against Trachoma (address, 33, Welbeck Street, London, W.1), April 19, at 4.30 p.m., "The Incidence and Clinical Type of Trachoma met with in Europe and North and South America—that is, in Countries which are commonly considered to be Non-trachomatous." The speakers will be Dr. Lavery (Dublin), Dr. Harry Gradle (Chicago), Mr. Arnold Sorsby (London). Subsequently there will be a short discussion on the treatment of trachoma by sulphanilamide and its congeners. Members of the congress are invited to attend these meetings, and ophthalmologists from abroad are invited to attend all meetings of the congress.

The twenty-ninth annual exhibition of scientific instruments and apparatus, arranged by the Physical Society, will be held at the Imperial College of Science and Technology, Imperial Institute Road, South Kensington, as follows: January 3, 2.30 p.m. to 9 p.m.; January 4, 4 p.m. to 9 p.m.; January 5, 2.30 p.m. to 9 p.m. The leading manufacturers of scientific instruments will be exhibiting their latest products in the Trade Section. The Research and Educational Section will contain contributions from research laboratories, and experiments of educational interest. A discourse will be delivered on January 3, at 7.45 p.m., by Dr. J. D. Cockcroft, on "The Cyclotron and its Applications." Admission to the exhibition is by ticket only, obtainable from the Exhibition Secretary, 1, Lowther Gardens, Exhibition Road, S.W.7.

In connexion with the fortieth anniversary of the discovery of radium a special wireless programme was relayed to America from Paris on November 27, in which there took part Senator Justin Godard, president of the International Union against Cancer, Dr. Francis Carter Wood, director of Columbia University's Institute of Cancer Research, and Dr. J. E. Gendreau, director of the Radium Institute at Montreal. The last speaker recalled how on her visit to America in 1921 Madame Curie had found in a practical country enthusiastic idealism and a friendly sympathy which gave her renewed inspiration and courage. The 1939 meeting of the Union is to be held at Atlantic City, New Jersey.

The Minister of Health on December 9 received a deputation consisting of representatives of the Oxford and District Joint Hospitals Board, the British Medical Association, and the Emergency Committee of Oxford and District. The deputation put before the Minister a statement as to their experience of the emergency provisions before and during the recent crisis. The division of responsibility between the central and local officers, the areas at present covered by hospital officers, and the arrangements decided on between the Ministry of Health and the Service Departments for the best use of the hospital accommodation of the country were among the topics discussed. The Minister promised to bear in mind the suggestions of the deputation with regard to the organization of their district for the future.

The postgraduate news in our *Supplement* contains an announcement of clinico-pathological demonstrations by the staff of Westminster Hospital on Tuesdays, at 5 p.m., beginning on January 3 and continuing at fortnightly intervals.

Lord Nuffield has given a cheque for £31,383 to the Wingfield Morris Orthopaedic Hospital, Oxford, for capital expenditure on buildings and equipment. This brings his gifts to the hospital up to £140,000. His benefactions in the cause of orthopaedic surgery in Great Britain, Australia, New Zealand, and South Africa now amount to approximately £500,000.

The authority for awarding the Nobel prize in medicine, the College of Teachers of the Caroline Institute, Stockholm, has recently announced that no prize for medicine will be awarded in respect of the year 1938.

Dr. Ellice M. Alger, Professor of Ophthalmology at the New York Post-Graduate Medical School, on December 1 received the Leslie Dana Gold Medal "for outstanding achievements in the prevention of blindness and the conservation of vision" at the annual meeting in New York City of the National Society for the Prevention of Blindness.

Twenty-three Jewish professors from twelve Italian universities have been dismissed, including Ugo Lombroso (physiology), Albert Ascoli (morbid anatomy), Mario Donati (surgery), Carlo Foa (physiology), and Maurizio Ascoli (internal medicine).

Mr. Thomas E. A. Stowell, F.R.C.S., has been re-elected to the Council of the Industrial Welfare Society, of whose Advisory Medical Committee he is the chairman.

Professor Raffaeli Paolucci has been elected successor to Professor Roberto Alessandri in the chair of clinical surgery in the Faculty of Medicine at Rome.

Professor A. Staniceff, the eminent Bulgarian surgeon, has been elected rector of Sofia University.

No. 49

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended December 10, 1938.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for : (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. Median values for the last 9 years for (a) and (b).

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for : (a) The 126 great towns (125 in 1937) in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases : a blank space denotes disease not notifiable or no return available.

Disease	1938					1937 (Corresponding Week)					1929-37 (Median Value Corresponding Weeks)	
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)	(a)	(b)
Cerebrospinal fever	25	1	13	2	2	16	2	8	2	—		
Deaths		—	3				4	—				
Diphtheria	1,512	167	262	67	28	1,683	233	257	73	53	1,529	233
Deaths	26	—	7	4	—	37	8	5	1	—		
Dysentery	44	6	20		—	441	109	47		—		
Deaths				—	—				—	—		
Encephalitis lethargica, acute	2	—	—		—	4	—	—		—		
Deaths		—					1					
Enteric (typhoid and paratyphoid) fever	24	5	1	10	—	47	6	5	10	1	30	
Deaths	1	—	—	—	—	9	1	—	—	—		
Erysipelas			85	7	5			95	6	7		
Deaths		—					2					
Infective enteritis or diarrhoea under 2 years												
Deaths	36	15	16	10	1	59	18	15	8	5		
Measles		10	11		1			378		218		
Deaths	—	—	—	—	—	24	1	5	3	2		
Ophthalmia neonatorum	77	9	17		1	78	9	32		—		
Deaths												
Pneumonia, influenzal*	794	94	19	11	28	1,102	121	54	4	6	1,103	121
Deaths (from influenza)	26	—	7	1	2	45	4	17	2	—		
Pneumonia, primary			368	9				511	3			
Deaths		11		24	10		17		13	15		
Polio-encephalitis, acute	3	—				3	1					
Deaths		—					—					
Poliomyelitis, acute	27	2	1		—	10	—	1	1	2		
Deaths		—					—					
Puerperal fever	3†	3	18	2	1	5†	5	11	5	—		
Deaths		—					3‡					
Puerperal pyrexia	163	18	21		—	160	22	19		—		
Deaths												
Relapsing fever	—	—			—	—	—	—		—		
Deaths												
Scarlet fever	1,943	166	347	49	73	2,434	160	602	127	89	2,441	300
Deaths	4	—	2	1	—	1	1	4	1	—		
Small-pox	—	—	—		—	—	—	—		—		
Deaths	—	—		—	—	—	—		—	—		
Typhus fever	—	—		—	—	—	—	—	—	—		
Deaths				—	—				—	—		
Whooping-cough		193	343		10			32		12		
Deaths	10	1	3	—	—	8	4	—	1	2		
Deaths (0-1 year)	299	64	74	30	19	386	72	105	33	20		
Infant mortality rate (per 1,000 live births)	49	52				65	60					
Deaths (excluding stillbirths)	4,681	852	672	213	176	5,244	994	799	215	160		
Annual death rate (per 1,000 persons living)	11.5	10.9	13.7	14.4	15.6	12.9	12.5	16.3	14.7	14.2		
Live births	6,044	1,101	816	359	232	5,570	1,124	808	268	197		
Annual rate per 1,000 persons living	14.9	14.0	16.6	24.3	20.6	13.7	14.2	16.5	18.3	17.5		
Stillbirths	253	34				259	40					
Rate per 1,000 total births (including stillborn)	40	30				44	34					

* Includes primary form in figures for England and Wales, London (administrative county), and Northern Ireland.

† After October 1, 1937, puerperal fever was made notifiable only in the administrative county of London.

‡ Deaths from puerperal sepsis.

EPIDEMIOLOGICAL NOTES

Principal Infectious Diseases in England and Wales during November, 1938

In the five weeks ending December 3, 1938, 9,885 cases of scarlet fever, 7,467 cases of diphtheria, 3,451 cases of primary pneumonia, and 133 cases of enteric fever were notified in England and Wales. The notifications of these were respectively 76 per cent., 108 per cent., 76 per cent., and 79 per cent. of the expected numbers (deduced from the median values of the corresponding weeks of the years 1929–37).

Enteric Fever 1937-8

An increase in typhoid morbidity was observed in 1937, in comparison with the previous year, in the United States of America and Japan and in most European countries; the only countries in which a decline was recorded were Norway, Bulgaria, Yugoslavia, and England. In this country, in spite of the increase in November (chiefly the Croydon epidemic), the number of cases recorded in 1937 was only 84 per cent. of the number for 1936. The available data for typhoid morbidity in Europe show little change compared with 1936; the highest rates were recorded in Portugal (16.5 per 100,000 population, as against 14.3 in 1936), Malta (10.3), and Hungary (9.5, as compared with 10.1). Then came Czecho-Slovakia (6.3 against 6.0), Bulgaria (5.8), Lithuania (5.5), Rumania (4.3), Turkey (3.8), and Yugoslavia (3.5 per 100,000). In 1938 a decline in the number of cases was observed in England, Germany, France, Czecho-Slovakia, Poland, the Netherlands, and the Scandinavian countries. Despite the observed decline in morbidity in recent years the seasonal distribution, which differs somewhat from country to country but is generally greatest in the second and third quarters of the year, remains unchanged. The incidence of the disease in 1938 was below the median value for the years 1927–37 in England, France, and Poland, and below the median for the period 1933–37 in Hungary.

During the week under review the incidence of enteric fever in England and Wales and in London fell from 29 to 24 and 8 to 5 respectively. The centres chiefly affected were: Lancashire 5 (Liverpool 4, Blackpool 1); London 5 (Shoreditch 2, Battersea, Islington, and Lambeth 1 each); Essex 2 (Dagenham, Romford); Yorkshire West Riding 2 (Sheffield, Holmfirth). No more cases of typhoid fever have been notified in the Shoreditch outbreak since last week, but a third death has been reported.

Acute Poliomyelitis *

There was an appreciable drop in the notifications of acute poliomyelitis in England and Wales and in London during the week—27 (37) and 2 (9) respectively. The chief counties affected were: Southampton 3 (Bournemouth, Southampton, Eastleigh); Essex 2 (Colchester 2); Glamorgan 2 (Cardiff 2); Kent 2 (Bromley, Chislehurst and Sidcup); Lancashire 2 (Barrow-in-Furness, Westhoughton); London 2 (Deptford, Lewisham); Middlesex 2 (Harrow, Twickenham); Surrey 2 (Guildford, Kingston-on-Thames). According to a statement in the Press 2 cases of poliomyelitis occurred at Wellington College and parents were notified that their sons could return home immediately.

Infectious Diseases in China (Canton)

A recent report states that despite the constant influx of refugees and the continued migration of large numbers of persons there have been no serious epidemics during the past year and the general health of the people has maintained an average standard so far as infectious diseases are concerned.

Small-pox.—The epidemic which began in December, 1937, lasted until April, 1938. No accurate figures are available, but the number of cases is estimated at 1,000 to 2,000. There was a high proportion of cases of haemorrhagic small-pox and of purpura variolosa. Work at the Sai Chuen military academy indicates that assistance in the diagnosis of difficult cases at the beginning of an epidemic may be obtained by sternal puncture, the view being held there that in small-pox there is in the bone marrow an increase of the plasma and reticulum cells and of lymphocytes.

Malaria.—Only a few cases occurred in Canton, and the disease never assumed epidemic proportions there. There was one death in a European. Serious epidemics occurred elsewhere in the province, especially in the eastern area, in the Swatow area, and in Hong Kong and Macao.

* Except where otherwise mentioned, figures in parentheses refer to the week preceding the one under review.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

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QUERIES AND ANSWERS

Flatulence on a Milk Diet

"E. S." asks for information concerning the prevention of flatulence with patients on a milk diet.

*** Excessive gas occurring in the alimentary tract of a patient on a milk diet is either swallowed air or gas formed by fermentation. Actually milk tends to decrease rather than increase intestinal fermentation, and therefore the more likely cause of flatulence is the excessive swallowing of air. This may be prevented by giving the milk in semi-solid or solid form. Milk jelly, junket, and cornflour shapes might be tried. There is an excellent chapter on milk in the latest edition of Hutchison and Mottram's *Food and the Principles of Dietetics* (p. 136). If fermentation is suspected as a cause one of the special milks such as sour milk or buttermilk might be tried.

Wasp Stings

Dr. C. STRICKLAND, Professor of Medical Entomology, Calcutta School of Tropical Medicine, writes with reference to "A. H. D.'s" query on wasp stings (*Journal*, October 1, p. 727): I would suggest he look up L. I. B. Braun in *South African Medical Record*, September 26, 1925, vol. 23, No. 18, p. 408, for Notes on Desensitization of a Patient Hypersensitive to Bee Stings. Of course a bee is not a wasp, but there you are!

Income Tax

Tax Deducted from Annuity

"J. G." pays his mother £100 a year under a deed for a period of seven years. He deducts tax from the payments and the amount so deducted is repaid to the mother when she

reclaims it. He asks, "Do I have to repay to the Inland Revenue the amount of tax I have deducted?"

*** No; the effect of the deed is to convert £100 of his income into the legal income of his mother. She is entitled to have the tax repaid to her, and there the matter ends so far as "J. G." is concerned.

Repayment of Loan

"A. J." borrowed £2,000 to buy a share in a partnership on terms requiring him to pay back £250 per annum. Is there any way in which he can get relief on this £250?

*** No; the payments represent savings out of income, are capital in their nature, and do not affect income tax liability.

LETTERS, NOTES, ETC.

Treatment of Cracked or Sore Nipples

Dr. J. WALKER (Bootle, Liverpool) writes: In an experience of over fifty years in general practice I have found nothing so effectual in promoting rapid healing of cracked or sore nipples as a very old, and apparently almost forgotten, device known as "Wansbrough's metallic nipple shield." The action of the milk on the shield produces lactate of lead; of course, the nipple is carefully cleansed after removal of the shield.

Sulphonamide in Acute Cystitis

Dr. A. FREITAG (South Norwood) writes: I think the following case might be interesting from the point of view of the rapidity of the response to sulphonamide therapy. A married woman aged 38 was operated on, on October 21, for a chronic prepyloric ulcer. On October 28, while in hospital, she developed slight dysuria and frequency of micturition. She was sent home on November 7. I saw her on November 9, when her frequency of micturition and dysuria were a little more troublesome. On November 11 she developed rigors; her temperature was 103° F., her pulse rate 120, and her urine contained *B. coli*. The dysuria and frequency were very distressing. I put her on sulphonamide, 1 gramme every four hours, followed by copious fluids. On November 12 her temperature was 100° F., her pulse rate 90, and she felt better as regards her urinary symptoms. On November 13 her temperature was 98.6°, her pulse rate 84, and the urinary symptoms had almost completely disappeared. The dosage of sulphonamide was reduced to 0.5 gramme three times a day for another two days, and then stopped. She has had no recurrence since and has felt perfectly well. The interesting point is that within twenty-four hours of the first administration of sulphonamide the patient improved dramatically without any other treatment whatsoever.

Karl Sudhoff

Dr. WALTER R. BETT writes: In these days of political bewilderment, when even the ideals of scientific fellowship are challenged and in jeopardy, the brilliant and monumental researches of Karl Sudhoff continue to bear testimony to his daily renewed and daily vindicated consciousness of a common intellectual heritage. To many men in many lands his friendship was a sense of comradeship in work that recognized no national limitations. Son of a Protestant Minister, Sudhoff was born at Frankfort-on-Main on November 26, 1853. At the age of 25 he started general medical practice at Bergen, near his native city, four years later moving to Hochdahl, near Düsseldorf. His scanty leisure was divided between gardening and medical history. When he was 52 years old it so happened that the widow of the Viennese medical historian, Theodor Puschmann, left her entire fortune to the University of Leipzig to promote medico-historical research. Sudhoff, who had acquired a taste for this subject in his student days and who was entirely self-taught, in 1905 accepted the chair on condition that an institute was built for him. A born researcher, with a sound training in the ancient languages, unquenchable enthusiasm, and an excellent memory, for nearly twenty years he travelled far and wide combing public and private libraries, archives, and museums for rare and unprinted medical manuscripts and illustrations, which he photographed, collated, and edited. No one ever saw him tired. Fond of the society of young people, his was a happy, imperious, temperamental nature. While as a lecturer he could be exceedingly dull, in conversation he was always interesting and even inspiring. A voluminous and charming correspondent, his handwriting even in his old age was clear, bold, and artistic. Of his original contributions to medical history his writings on the School of Salerno, on leprosy, syphilis, and plague, and particularly on Paracelsus, whom he may be said to have rediscovered, are exhaustive and of permanent value. While the *Sudhoff Archiv für die Geschichte der Medizin* and the Professor Karl Sudhoff-Strasse in Hochdahl tangibly perpetuate his name, his memory will continue to animate and inspire medical historians of the civilized world for many generations to come.

An American Country Doctor's Notebook

Dr. JOHN S. MEIGHAN writes from Glasgow: Please allow me heartily to commend to those of your readers who do not know it Dr. Wm. N. Macartney's *Fifty Years a Country Doctor* (U.S.A.—British publisher, Geoffrey Bles). In addition to many interesting experiences the reader will find many valuable tips and wrinkles of all kinds, some of them admittedly heterodox, but perhaps none the worse for all that. It is sad, however, to find Dr. Macartney recommending linseed poultices for boils, and his statement, "A boil is always ready for incision from the time it starts," is sadder. Surely modern experience is agreed that the less boils are interfered with *locally* the better, while boils in the *facial* area should be left severely alone. Dr. Macartney is typical of what might now be called the "old" family doctor, and is just the sort of man one would like to see at one's own bedside, in the first instance at least, if one were seriously ill. He himself, however, does not believe that the day of the G.P. is over. "From two-thirds to three-fourths of our population are still treated by their family physicians," he says, and "The species is a long way from extinction; they are a hardy breed and will survive." The British reader of the book should bear in mind that, to Dr. Macartney, Bombay is not the "Gateway of India," but a small town in the north of New York State. The book is unfortunately marred by numerous printer's errors (there seems to be an epidemic at present in London of what I might call "proof-readers' carelessness"), and by an extraordinary oversight page 347 appears between pages 345 and 346.

Tuberculosis Christmas Seals

For thirty-two years the double-barred red cross has appeared on Christmas seals, issued at first by the American National Red Cross, and since 1920 by the National Tuberculosis Association. This year's design depicts two children standing by a curtained window and watching their mother place a lighted candle on the sill. The three figures are dressed in mid-Victorian attire, and the predominant colours are red and green. The seals are issued in sheets of one hundred stamps, ninety-six being the regular seals, while the four corner ones are portraits of Laennec, Koch, Edward Livingston Trudeau, who in 1884 founded the first American open-air sanatorium for early tuberculosis, and of Einar Holboll, a Copenhagen post-office clerk, who in 1904 suggested the use of Christmas seals to brighten letters and greetings and to raise funds towards building a tuberculosis hospital.

pH for the G.P.

Those who would like to know a little more about the mysteries of *p*H can obtain some useful information from a booklet produced by the British Drug Houses, Graham Street, London, N.1, entitled *pH Values: What They Are and How to Determine Them*. This is the fifth edition of the booklet, and now consists of thirty-two pages which include among other things a chart of indicators and hydrogen-ion concentration data. A copy will be sent free to any practitioner who applies to the above address.

Wanted—Osteology Sets

Brigadier T. C. MUDIE, D.S.O., Secretary of the Scottish Branch, British Red Cross Society, writes from 206, Bath Street, Glasgow, C.2: May we ask the courtesy of your columns to appeal to any Scottish doctors who have osteology sets they no longer require to send them to us for the use of first-aid classes? We are at present organizing an exceptional number of such classes both for V.A.D.s and for A.R.P. volunteers, and would be most grateful for any sets for instructional purposes.